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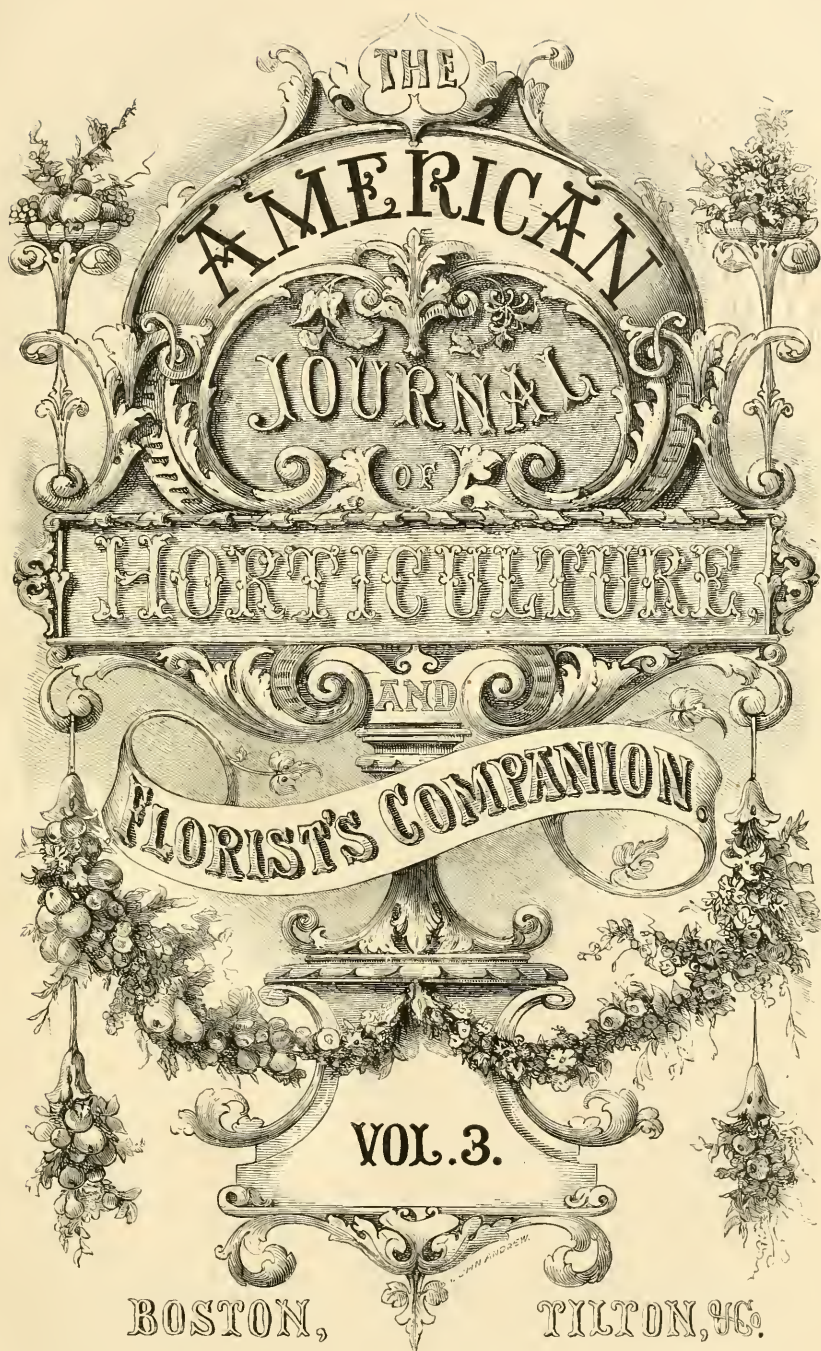


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VOLUME III.

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OLD AND NEW HOMES.

CHAPTER IV.

Cost of the Farm. — The Piggery. — Cleanliness. — Beautifying our Home. — Strawberry-picking. — Busy Times. — Profitable Crop. — Money-making for All. — Pease. — Raspberries. — Plenty. — The Vegetables : their Luxuriance. — Comparisons with our Neighbors.

OUR farm contained a little over twenty acres, and had cost my father \$3,500. A good barn of moderate size was on the premises ; but it contained ample accommodations for a farm whose productions were sent immediately to market. There was what is here called a “lean-to” shed for our cow, with suitable arrangements for sundry pigs. My father took great pride in this last establishment. It is a favorite idea with many intelligent farmers, that pigs love dirt, and are never so well satisfied as when they are wallowing in a mud-puddle : but my father’s theory was that a pig is as fond of being clean as any other animal ; and, if ordinary care be taken of his quarters, they need never degenerate to the unsightly condition in which some are always to be found. But when the latter state of things has

produced its usual consequences, and the poor creatures are covered with fleas, they are glad to take refuge in some kindly mud-puddle, whose cooling depths may perchance rid them of some of these tormenting companions. At all events, my father was resolved to test the theory ; and, so far, it had worked well. The huge mother, with her seven young ones, were all as clean and white as if newly washed ; and there was little to complain of about the pen. Occasionally, the premises were treated to a good wash-down ; and the unclean creatures seemed to enjoy their fresh bed of straw as much as if they were not swine.

It was a vast relief to my mother and myself that there was no large dairy to attend to. We had so long been accustomed to this work, — making butter and cheese for the market, until we almost loathed the sight of either, — that now, when we had but one cow to milk, and only butter for our own use to be done, it seemed quite a release from toil ; and, after the in-door work was finished for the day, we found time to arrange the flower-beds in front of our house, and train the young vines and roses, which were needing attention. Some day, when the new piazza should be built, we should want all these vines to train around its posts ; and, in the mean time, they would be increasing in size and value. By our exertions, the little lawn had begun to look quite attractive, while the clean white front of the house was certainly very neat and cheerful. Our barn and cow-shed were also whitewashed ; and I really believe, that, had we been disposed to sell our farm at that time, it would have brought us several hundred dollars more than we gave, on account of those cheap improvements.

We had been settled in our new home just two months when the strawberry-crop began to ripen. It was a busy season ; and, from the gathering of the first fruit (about the 20th of May) until the middle of June, we were occupied in preparing the product for market. A few weeks beforehand, we had received a visit from several agents, or middle-men as they are commonly called, who desired to engage all our season's fruit, to be shipped by railroad to New York or Philadelphia. The offer was to buy the crop at the regular market-prices at the time of shipment, to return safely all empty boxes and chests, and to make a cash remittance once a week for all the fruit sent. Upon consultation with our neighbors, who had formerly dealt with one of these men, my father agreed to employ him ; and, as soon

as the first picking had begun, the chests, containing quart-boxes, were despatched to his address per railroad. We had only three chests the first time : but, as they were among the first in the market, they brought the handsome price of seventy-five cents a quart ; and, as each chest contained sixty quarts, this first shipment brought us the snug little sum of a hundred and twenty-six dollars. Next market-day we did better ; for they began to ripen rapidly, the weather being warm ; and we sent *ten* chests to the station, which was fortunately so near our place, that we were able to pick until within an hour of starting-time. The afternoon " market line," as it is called, stopped at every station or cross-road, and picked up the produce that was waiting upon the platform ; and thus our freshly-gathered strawberries arrived at New York before daylight, in good condition for market. Our second shipment brought us sixty cents per quart, the price having fallen somewhat ; so that we received three hundred and sixty dollars. After this, the number of chests shipped every day or two increased considerably ; until, by the close of the strawberry season, we had sent to market, as the proceeds of our ten-acre patch, *five thousand* quarts, which had netted us an average of twenty-five cents per quart, or about twelve hundred dollars for our crop. This was doing quite as well as we expected ; for our predecessor had not left the strawberry-grounds in clean condition. In fact, nearly one-half of it was fairly run down with grass, weeds, and old age ; and ought, in strict propriety, to have been ploughed under.

We had all been as busy as bees during the whole time. About a dozen neighboring children had been employed as pickers ; the smart ones readily picking seventy-five quarts a day, for which, at two cents a quart, they would receive a dollar and fifty cents. So popular was the business amongst the laboring-classes, that both women and little children were ready to come into the service. My mother and I found constant employment in assorting and arranging the berries in the chests. This was done in our large shed-kitchen, into which the pickers delivered their quart boxes as soon as filled. As to our own children, little Mary and Johnny, aged respectively ten and twelve years, they had worked so vigorously in the field during all the season, that, by the time it was over, they had quite a little purse between them, which was safely deposited in my keeping to await the addition of further sums. Besides the strawberries, our pease yielded very well ; and they were

amongst the earliest in the market, which, of course, added greatly to our aggregate profits. Had we been a few days later, the price would have been much less.

The crops now came on in quick succession. In a week or two after the last strawberries were gathered, we began with our raspberries; and these were literally loaded with fruit of a bright-red color, large and luscious. There was scarcely an acre of the favorite Philadelphia Raspberry, and these of the previous year's planting: they were, as yet, too costly for one to stock a plantation with. The few that we had, however, bore so profusely as to prove their great value; and it was resolved that every sucker and offshoot should be assiduously cultivated, so as to propagate the variety, and increase the number of plants for another year. Had we wished to part with these new plants, we could have done so very readily at a high rate, so great is always the demand amongst fruit-growers for desirable kinds.

As many of our raspberry-plants were new, and therefore not in full bearing, we thought ourselves fortunate in being able to send to market two hundred quarts of fruit; from which we netted *forty* cents per quart, or eighty dollars for the whole. A long drought of some three weeks had dried up the fruit considerably, and, of course, lessened the amount for market; but we could not complain. One of our near neighbors, who had a single acre of these new raspberries, cleared four hundred dollars from the crop, in spite of the dry weather; and ours only needed time to do as well. Simultaneously with the raspberries, sundry patches of beans, potatoes, and squashes, came into bearing, together with occasional baskets of early corn and cabbages. For these we found a ready market at the stores in town; and, by the usual plan of produce exchange, we were thus always well provided with the necessary groceries and dry-goods called for in a family. I confess that this balance of credit at the store was a very great convenience. After luxuriating ourselves in the greatest variety of fresh and wholesome vegetables, we had enough over to buy most of our clothing and groceries. My mother, I know, felt richer than she had ever felt before. Our wardrobes were in better order, because we could so freely replenish. My father had kept the fruit proceeds in reserve as a separate fund, hoping we should have our living out of the vegetables

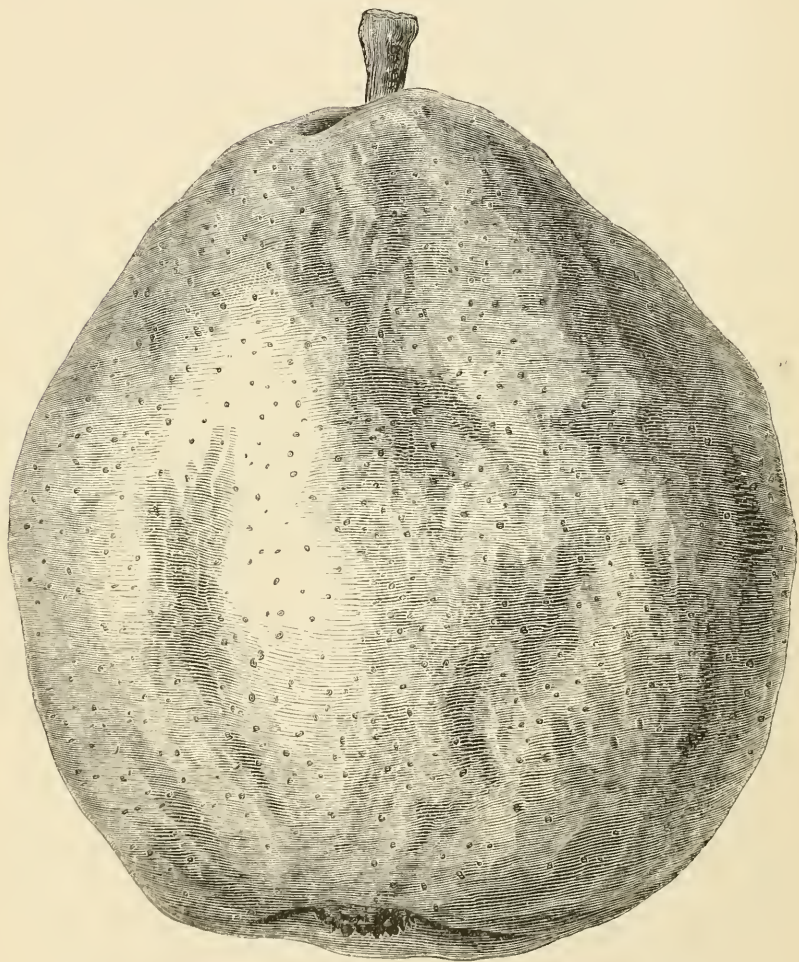
in the way I have described. But we were not entirely able to secure this result. We were all new hands at this growing of "truck" as they call it here, and made some total failures. Some seeds were planted too early, and others too late. In fact, we fell far behind our neighbors, whose long experience insured success. Then the long spell of dry weather dried up many of the young plants, and caused us great disappointment. Thus we discovered, before the season was half gone, that we had many things to learn.

Had we followed the example of some of our small-minded neighbors, we might have done with less for ourselves, and therefore saved more; but comfort and plenty were not thus to be sacrificed. We were healthy, and had good appetites, which could only be satisfied with a sufficiency of the relishable things around us. At our old home, we had been accustomed to raise a few common vegetables; but never had we enjoyed so great a variety of such splendid quality as were produced on our present farm. This was owing, first, to the condition of the soil, originally a light, sandy loam, but highly enriched by constant dressings of manure; and, secondly, to the quick growth of the vegetables themselves. The plants drew their vitality from the ground, not slowly as from a heavy clay-soil, but vigorously. They seized upon the fertilizing principle, and rendered us immediate and rich returns for our expenditures. Our next neighbor's farm afforded us a good opportunity for comparison; for he was so anxious to make money, and so grudged to lay out a dollar on his land, that very little was applied to enrich it beyond the production of his own barnyard. My father and he often compared notes on the expenses of their farms, and there was a difference of several hundreds of dollars in this one item; yet, when the season was over, the balance was very encouragingly in our favor. His crops had fallen short of ours both in quality and quantity, while the exhausted soil appeared to be incapable of any further production. Ours was in good condition, and would require a less expenditure for fertilizers the next year.

H.

PRESIDENT PEAR.

THIS noble-looking pear is another of Dr. Shurtleff's Seedlings, and one of the best of them. It is quite remarkable that the doctor should have



raised so many seedlings of such good quality. It takes many years to fully determine the value of any new pear; and the public are slow to admit any

new candidate for public favor when we have so many really fine varieties, unless they are in some respect superior or fully equal to those now in cultivation. The pear we are now describing has certainly the merit of large size and good quality to recommend it, and, on a more extensive trial, will, we doubt not, prove a valuable addition to our collection of this fruit.

It fruited for the first time in 1862 ; in size large, often weighing a pound or more ; form roundish, inclining to obovate ; diameter four and three-fourths to five inches ; length five to five and a half inches ; surface somewhat irregular ; slightly angular ; the greatest diameter through the middle, growing somewhat narrower towards each end ; color greenish-yellow, with some russet, especially about the stem and calyx, pale red on exposed side ; stem about half an inch long, rather stout, slightly curved, and inserted in a narrow and rather deep cavity ; calyx medium size, rather open in moderately deep basin ; flesh rather coarse, yellowish-white, melting and juicy, with very pleasant sub-acid flavor. Somewhat gritty about the core, which is of moderate size for so large a fruit. Time of ripening, Nov. 1. Not inclined to rot at core, nor does it ever crack. It is an abundant and regular bearer.

PORTULACA. — This plant is the best we have for the summer decoration of a bed of spring-flowers. The roots do not strike deep enough to injure the dormant bulbs, nor do the plants seem to impoverish the soil. From the middle of June until October, the bed is a blaze of bloom.

The colors are orange, yellow, crimson, red, and white, with all possible variegations of these colors. Seed may be sown at any time, it being only necessary to throw it broadcast over the bed. After the first year, the plant will sow itself, and young seedlings, by myriads, come up every year.

GRAPE-VINES. — The past season has been so wet and cold at the North, that many of the grape-vines have failed to ripen their wood as usual : even the Concord and Hartford Prolific, two varieties that are known to be among the most hardy, show much immature wood. Some of the varieties, such as Allen's Hybrid, will not ripen their wood. If the winter should be very severe, such vines may suffer.

WOODPATHS.

EVERY person is sensitive to the beauty of a natural wood. All can feel the comfort of its shade and protection, the freshness of its perfumed air, the quiet of its seclusion, and its many pleasant accompaniments of birds, fruits, and wild-flowers. We do not learn by tuition to appreciate these objects : they are adapted not only to our instincts, but they are the real cause of many of the poetic thoughts that imagination suggests to the mind. We feel, while rambling under these lofty trees and over this carpet of leaves and mosses, that nothing which Art has accomplished will compare with the primitive works of Nature. There is no architecture so sublime as that of a forest ; there is no garden like the little paradises that abide here wherever accident has left a dell or a dingle open to the sun ; there is no music like the notes of its solitary birds, no worship so sincere as in these temples, no cloistered solitude so sweet as under these shadowy boughs.

Yet how much greater are the charms of a natural wood if it be intersected by woodpaths ! When a farmer makes a passage for his wagons through a forest, he operates without artistic design, and his work harmonizes with Nature. He thinks only of facilitating progress through his land ; for, though he may be alive to all rural sights and sounds, he cannot pause from his labors to do any thing for mere embellishment. He is governed only by his ideas of utility and convenience ; yet the works of decorative Art are tame and prosaic by the side of this rude pathway, which has expelled no wild plant from its habitats, nor a single forest-warbler from his retreats. We experience within it a true sensation of Nature, with a pleasant reminder of simple rural life. It is hallowed by its humble purpose of utility, by its freedom from artifice, by its perfect resignation to the care of Nature and chance, by its beauty without adornment.

The woodpath becomes henceforth the avenue to all the delights of the season. It introduces us to the productions of the forest under their most interesting aspects. The trees that spread their branches overhead shelter it from cold and heat, and permit thousands of beautiful shrubs to grow there that would be fatally crowded in a dense wood. Multitudes of flowers appear continually in its borders, one host following another in glow-

ing succession, and looking upon us as with the eyes of so many little sentinels of light and beauty, placed here to make the scene delightful to the sight and the imagination. Like birds that multiply around a human dwelling in the forest, flowers are always numerous in these woodland paths, and consecrate them to Nature.

There is nothing here to suggest any disagreeable ideas of pride and pretence, or to excite envy by the ostentatious parade of wealth. Nature never insults the most humble person who enters her sacred precincts. The rich and the poor, the learned and the unlearned, if they have any love of truth and beauty, are equally pleased and instructed. They surrender their hearts to the simplicity of the scenes around them, forget the cares that usually perplex them, and find pleasure in every object they meet. Here are both freedom and seclusion ; as, though every foot of land has an owner, no invidious signs of appropriation are made apparent to the pilgrim of these walks. Every thing here has grown up without culture ; for these wildings are the flowers that Nature strewed at her feet when she first stepped out of Paradise to bless and beautify the earth. No spaded earth about the roots of the flowering shrubs indicates their petted value to some proprietor ; no nicely-cut turf at the borders of the path shows the exercise of the topiary art, and the consequent exclusion of Nature and freedom.

The flowers that peep out from this grassy path and its tangled borders are eclipsed in splendor by the prouder ones of the garden. They are lovely in their wildness and spontaneous growth ; but, like the stars of heaven, they affect the imagination more than the sight. Though fashion may condemn their beauty, Nature cherishes and preserves them ; and, to a poetic eye, they have charms which cannot be heightened by art. For every thing that blossoms here, or greens the turf, or jewels the trees and shrubbery with purple and scarlet fruit, or scatters incense in their path, was present at the bridal of the earth and sky. The gales that have always swept through these trees are familiar with their perfume ; morning and evening greet them, and are acquainted with their beauty ; the little brooks know them ; sunshine and shadow have played and fondled with them ; the wild bee has sipped of their honey, and the birds have nestled in their foliage.

In these fern-embroidered aisles, and under these foliated arches, where the birds have warbled ever since the morning-stars sang together, — here will we linger when we would worship in Nature's sanctuary, and draw from her an inspiration making the scenes of earth as delightful as those of romance. We will seek the wood-haunts of the Naiad, where she sits by her fountain, distributing her favors to herb, tree, and flower ; and, among these dripping dells, we will greet her as the mother of dews. We will drink of her waters with the thrush and the wood-pigeon, and bear home baptismal drops from her well in the leaf-cups of the sarracenia, and incense from her altar in branches of eglantine and sweet-fern. We will sit under these wide-spreading oaks, and take our repast with the squirrel, while from the tall tree-top he watches our motions.

We pass, as it were in a happy dream, through vistas of tall trees, forming with their foliage and the sky a netted canopy of green and blue, where delicate aerial voices of mingled chirping and song inspire every wanderer with their own cheerfulness. Sometimes there is a stillness almost sublime : in a moment are awakened certain musical and mysterious sounds, that fill the mind with dim conceptions of something beautiful still unseen and unknown ; then a confusion of voices without discord, — a universal hum so soft and so melodious, that every bird that sings may be distinctly heard above it, and his voice is made sweeter by this harmonious din. As we view the surface of some still water, embossed with the reflection of embowering shrubbery and of the herbage that fringes the border, the fountain seems to look upon us with distinct vision, and to know us. Suddenly we are under the open sky : we have been led out of the wood into the retreat of the hare, who is startled from her repose by our unexpected intrusion.

O happy path to blisses unknown in the outer world ! guide to joys that revellers cannot feel, nor the ambitious know ! Wherever there is gladness or beauty, or melody of birds and fountains, or little dells full of roses and honeysuckles, or dripping rocks green with velvet mosses and variegated lichens, — to all, this woodpath points the way ; now safe through copses of tangled green-brier and clematis ; through borders of roses, unshorn by art, and not planted by man ; through beds of raspberries intermingled with ferns, and thickets of tremulous aspens interwoven with sunshine ;

then under solemn pines, opening into a grander solitude, where dwells perpetual twilight, — halls familiar with darkness at noonday, and visited only by the beams of the morning and evening sun.

Everywhere there is a store of essences on the dewy air, — sometimes a scent of pines, such as a mild south wind at twilight will waft into your window from a neighboring grove ; then the perfume of oaks, less sweet and aromatic, but like that which we may suppose to have surrounded the Oracle of Dodona. Now a mild breeze will waft us the scent of strawberry-beds, bearing a message to the bee to tell where the flowers have spread their feast of nectar. At every season, the air about this path is full of sweet odors, that would communicate to our senses the contiguity of certain plants. Not a flower appears that does not give some balmy notice of its presence ; not a zephyr wanders through this avenue but with wings laden as if it had passed over the plains of Araby.

While rambling in one of these paths, where the ruts of the wagoner's wheels are hardly perceptible along the green turf, I am affected by a glow of pleasure that cannot be felt in a nicely-gravelled walk through the grounds of a palace. I feel a sense of quiet and poetic seclusion here, that would dissolve, as by a spell, at the least appearance of ornamental design. It is difficult to explain the philosophy of this sentiment. But Nature, whose works perfectly harmonize with the rustic woodpath and the artless operations of rustic toil, refuses her blessing to the nicely-trimmed avenue and to the ambitious designs of wealth. In a gravelled walk through a lordly estate, there is neither seclusion nor repose ; in the pathless wood, seclusion becomes painful solitude : but in the unadorned woodpath is sweet retirement, where the rude work of pastoral hands is such as to render the solitude still more charming.

Though the woodpath does not glow with the splendor and abundance of a parterre, there is a never-ending variety of objects to enliven the senses and the imagination. Here are sweet violets dotting the green-sward with heaven's own azure ; roses that breathe into the atmosphere the very aroma of purity ; vines that throw their drapery over the branches that form our canopy, making the air ambrosial with their fragrant blossoms in summer, and tempting our sight with their purple clusters in autumn. Here are mossy couches so soft, so beautiful, so hallowed, that the

young maiden who should sit upon them becomes a goddess ; and the student of Nature turned pilgrim here would worship her with more devotion than he yields to science.

Take her, then, young enthusiast, and make her the Dryad of this wood. Lead her up this rustic avenue where violets will breathe out their grateful odor to the pressure of her maiden feet. Seat her in the shade of a Druidical oak, and fill her lap with roses which are the symbols of love, and with flowers of the blue forget-me-not, sacred to remembrance. Bind her forehead with arbutus as unfading as amaranth, and bring for her repast strawberries that cluster about these daisied grounds. Then will you feel that mankind are unhappy only as they wander from the simplicity of Nature ; and that we may regain our lost Paradise as soon as we have learned to love Nature more than Art, and the heaven of such a place as this more than the world of cities and palaces.*

Wilson Flagg.

CAMBRIDGE, July, 1867.

RHODODENDRONS.

IF we could have but one flowering shrub, we would choose a rhododendron ; for there is no other in which hardiness of constitution, vigor and symmetry of growth, elegance of foliage, and beauty of flower, are so fully combined. In spring and summer, autumn and winter, the rhododendron is always attractive, and, at times, is the most brilliant ornament of the garden or shrubbery.

Yet, with all these recommendations, this plant is but little grown, and very few florists or amateurs have fine collections. The reason for this is found in the fact, that care and attention in the first preparation of the soil are essential to success. This once well done, but little future care is necessary ; for a plantation well made at first will grow better each year, only needing occasional weeding, or, in rare cases, pruning or pinching.

* This essay is intended, not as a satire upon dressed and ornamented grounds, without which there would be a great lack of comfort in the suburbs of our cities, but as a eulogium upon Nature. The highest cultivation and ornament are essential to the garden and the pleasure-ground ; and, wherever Art and Nature are necessarily combined, Art cannot be too elaborate.

It is true, we occasionally see rhododendrons flourishing in common garden-soil, where no special care has been taken in preparation ; but these cases are rare, and the plants thus thriving are usually the more common varieties, which have, perhaps, survived in a plantation where the better kinds have long ago perished from neglect.

We propose in the present article to briefly give a few hints upon rhododendron-culture, based merely upon our own experience, the results of which have excelled our most sanguine expectations.

The first requisite for success is *freedom from drought*. The roots of the rhododendron, like all of the natural family to which it belongs (*Ericaceæ*), are very fine and delicate. If these once become dry, the plant is worthless ; for, the fine roots once killed, there is seldom strength enough to renew them, and the plant dies. Therefore, as few have a soil in which the rhododendron will naturally grow, preparation is necessary.

Another requisite is freedom from excessive moisture ; for, though the plants endure moisture better than drought, a stiff, clayey, retentive soil is uncongenial to them, and they never flourish.

A gravel subsoil is better than a clay ; and, if we can prevent the moisture from passing off too rapidly, we can grow rhododendrons. Let us, however, taking the seemingly most unfavorable situation, show how to prepare a rhododendron-bed. Having a gravel-hill sloping to the north, the time being about the first of November, let us begin operations by staking out a large oval on the side of the hill ; the upper edge being some six feet down the hill, that, when completed, we may *look down* upon the bed, as the plants, when in bloom, show thus to better advantage.

First, remove all the loam and sods, which will skim off about four inches of the surface, throwing them outside the stakes for future use. Second, begin at the upper line, and dig out the gravel, rolling it down the hill along and outside the lower line of stakes.

Continue this till you have a level plateau the size and shape of the proposed bed, and at the upper line of stakes, about four feet or more below the level of the original slope of the hill. This is the foundation of the bed. The remainder of the work is filling. Before filling in, however, it is best to provide against too rapid drainage by covering the whole bottom of the bed with pine-needles or oak-leaves to the depth of from one

to two feet : these, under the weight of the loam, will press down to less than six inches, and form an admirable bottom. If these cannot be obtained, meadow-hay would probably answer a similar purpose. Upon these throw the old sods taken from the surface of the bed.

The soil of which the bed should be composed is a mixture of one part peat or well-rotted leaf-mould, one part rich loam, and one part sharp sand. Let these be thoroughly incorporated, and the bed filled in at the upper stakes level with the former brow of the hill, and so outward forming a level plateau on top of the gravel foundation. We then have about three feet or more of prepared soil resting upon a six-inch layer of leaves and old sods. The sides should then be sodded on a long slope, using thick, heavy sods ; and, that there may be less chance of their breaking away, they should be pinned to the banking.

The sodding may, however, be delayed till spring ; and, indeed, the whole work may be performed in April ; though it is better for the bed to settle all winter, as it is in better order for spring-planting. About the middle of April, the whole bed should be well spaded over preparatory to setting the plants.

A word about plants. We have always obtained ours from England, sending the order about Christmas, and receiving the plants, *by steamer*, about the first of May ; but we have heard there are some fine sale collections in this country. Though we have never suffered any serious loss in importation, there is probably less risk in ordering from a home-nursery ; and it may prove more profitable, even if the first cost is twice or thrice as great.

In importations, the pound must be calculated at ten dollars, to cover the heavy steamer-freightage, the foreign exchange, and the unreasonable duty of thirty per cent in gold levied upon all imported plants. In this connection we may add, that the attention of Congress should be asked to repeal a duty, the effect of which amounts almost to a prohibition of importation, and which is levied upon articles, the introduction of which is a direct benefit to the horticultural interests of the country.

The plants, being obtained, should be set about one foot apart, or so that the foliage just touches, that the first year they may shade the ground. As soon as planted, a top-dressing, or rather mulch of two inches of tan, should be spread over the whole surface of the bed. If the summer is very dry,

a thorough watering of the whole bed once or twice may prove beneficial; but there is little chance of this being necessary.



In the autumn, just before the ground freezes, the plants should be protected by evergreen-boughs stuck into the soil, the butts of which will freeze into the ground, bend over the plants, and give all necessary protec

tion from the sun, as well as sustain the weight of heavy snows. A secret of success in rhododendron-culture is, *to protect from the winter sun*. For one rhododendron killed by cold, a hundred are killed by the winter sun.

As the beds get older, and the plants gain strength, this winter protection may be dispensed with ; but it is always better to place a few tall evergreens on the south-easterly side of the rhododendron-beds. Early in April the protection may be removed, and the plants thinned out by removing every other one. This transplanting should be attended to every spring ; for, if the plants are allowed to become crowded, they lose their beauty of shape, and are far less effective.

A bed prepared as above will need no renewals for years ; but, if at any time it appears run out, a top-dressing of pure leaf-mould or oak-leaves, forked carefully in in the autumn, will renew it. A very successful grower of this plant recommends well-rotted manure, which he has successfully tried for top-dressing ; but we cannot advise it from experience.

Where the bed is on level ground, an excavation should be made of the required size, and filled with prepared soil.

In clayey soils, drainage may be necessary in the bottom of the beds, which may easily be effected by a filling of stone ; but we have had no experience of this.

The situation of a rhododendron-bed should be a northern exposure ; but this is not essential : some of our best beds face the south.

The plants bloom from the 20th of May to the middle of July, according to the species or variety.

As soon as the flower has faded, the seed-vessels should be removed in order to insure fuller bloom for the next season, unless it is desirable to ripen seed. After blooming, the plants grow, perfecting their growth in a few weeks, and soon showing the flower-buds for the next season.

The following species are hardy in New England : —

R. maximum, our well-known wild rhododendron ; foliage not ornamental ; flowers small, in close heads, rosy-white, with green spots, opening about the 10th of July.

R. Catawbiense. — The Rose-bay of the Southern States ; foliage dark green, lighter beneath ; flowers lilac-purple in June.

R. Lapponicum. — This is a dwarf mountain-species, with small violet-purple flowers, seldom seen in cultivation, being of difficult culture.

R. Dauricum is a charming species, giving a profusion of pinkish-purple flowers in April, when nothing save crocus and snow-drops enliven the garden. The foliage is small and dingy, and the plant is not ornamental when out of bloom.

R. ferrigineum is the Alpine Rose, and is a very ornamental species. The flowers are freely produced in small heads; are of a light purplish-pink; and, except for their profusion, not very showy.

Other species and varieties which we sometimes find are *R. hirsutum* (sometimes called Alpine Rose), *hybridum*, *ovatum*, *myrtifolium*, *odoratum*, and *amœnum* (also called *Azalea amœna*), which are hardy.

The following are hybrids of Catawbiense, and are hardy in New England. These hybrids, of which our illustration gives a good idea, are the most ornamental of the hardy kinds.

Archimedes, rosy-crimson, light centre. *Album elegans*, blush, changing to white. *Album grandiflorum*, fine blush, white. *Bardayanum*, deep rosy-crimson. *Blandyanum*, rosy-crimson. *Brayanum*, rosy-scarlet, light centre. *Chancellor*, purplish-lilac. *Coriaceum*, pure white dwarf. *Delicatissimum*, white, edged with pink. *Everestianum*, rosy-lilac, spotted and fringed, fine foliage, a free bloomer, and the best rhododendron for general cultivation. *Giganteum*, bright rose. *Lucidum*, purplish-lilac, brown spots. *Onslowianum*, blush, yellow eye. *Purpureum elegans*, fine purple. *Roseum elegans* and *Roseum grandiflorum*, deep rose. *Roseum pictum*, rose, yellow eye.

We might add to this list indefinitely; but the above is a good selection of hardy kinds. *Nero* and *Lord John Russell*, two very beautiful varieties, are precariously hardy. *R. ponticum* and its varieties are not hardy in New England; and the Himalayan or Sikkim rhododendrons are all tender with us.

We propose in a future number to give notes upon the pot-culture of half-hardy varieties.

E. S. R., Jun.

CHERRIES AT THE WEST.

EARLY MAY. — Throughout the States of Virginia, Kentucky, Tennessee, and those north-west of the Ohio, we have a cherry under the above name. It is identical with the Kentish of Downing and the Early Richmond of Elliott.

Throughout the States south of the Ohio, it is known as Early May, or May Cherry, as it there ripens its fruit in that month. In Ohio, Indiana, and Illinois, it is often called Early Richmond.

At the last meeting of the Illinois State Horticultural Society, it was concluded to have it hereafter known in this State as Early May. Dr. Warder stated to the society, that, with the present light on the subject, he should also adopt that name in his work on fruits now in course of preparation. There can be little doubt that Downing committed an error in confounding this cherry with the old Kentish, or Montmorency, neither of which it resembles.

I have a letter from William R. Prince of Flushing, N.Y., under date of Oct. 13, 1862. He says, "Kentish Cherry of Downing is the same as the Early Richmond, so called on account of its being found by William Prince, in 1793, growing in gardens at Richmond, Va., where he obtained it; and, not knowing the true name, he called it the 'Early Richmond.'"

It has not been identified with any European variety: hence we conclude it is an American variety; an accidental seedling, most undoubtedly produced in Virginia, possibly in the city of Richmond.

According to the rules of pomology, the elder Prince had the right to name it Early Richmond, had he been correct in the supposition that it had not been named: but the fact that it was well known throughout Virginia, and the States that drew their fruit-trees directly from that source, as Early May, therefore the name ought not to be changed; and the Illinois State Horticultural Society did an act of justice to Virginia in restoring its true name, Early May.

How it was propagated. — In the early days, before nurseries abounded, the common practice by our frontier settlers in propagating a choice variety was mainly by suckers, or sprouts. Little grafting was done before

the beginning of the present century. Even now, in the States south of the Ohio, and in some places north of it, the Milam Apple (an inveterate sprouter) and the cherry in question are mainly propagated by sprouts, or suckers. In this county, nearly all of the old orchards of the Milam were produced in this way; and there are hundreds of bearing trees of the May Cherry that have been brought from Kentucky by the emigrants from that State, and the sprouts from these are in great demand. It was natural for Virginians, in going West, to take these fruits with them, from the fact of their easy propagation, hardiness, and constant crops. It is a singular fact, that although the sweet cherry is a native of the hot countries of Asia, yet it will not stand the climate of our Southern States.

In New York and the Eastern States, this cherry attracted little attention, from the fact that nearly all the finer varieties could be grown, and the common English, Kentish, and Morello produced good crops for cooking-purposes. In New Jersey, the case was different: the finer cherries being less hardy, the May Cherry became correspondingly popular, and, having been sent out from Flushing, went under the name given it by the late William Prince.

In all the early settlements of the North-west, those from the Eastern States carried with them the suckers of the Kentish and Morello; while those from south of the Ohio took the Early May.

About 1840, the Buffalo and Rochester nurseries began to attract attention, and large amounts of fruit-trees were sent West from them. Among these, the Duke, Heart, and Bigarreau Cherries held prominent position; but having been budded on the Mazzard stock, which is unsuited to the climate, and more tender than the varieties worked on it, have mainly proved a failure. Especially is this the case on the open prairies of the North-west. The old Kentish and Morello, though hardy, failed to produce fair crops of fruit; and people began to think the whole cherry family unsuited to the climate. As the Eastern States became cleared up, the sweet cherries became less valuable from the sudden changes from heat to cold, and from attacks of the black gnat.

It was supposed that a more hardy stock than the Mazzard would remedy the evil, and the Morello was put on trial; but its habit of throwing up innumerable suckers made it unpopular. The Mahaleb had been used to

some extent in Europe; and, about 1834, large importations were made of this stock from the French nurseries. From that time, dwarf cherries became the order of the day. But these did not meet public expectation, as they also proved tender. We next had a long list of hardy varieties from the Morello and Duke families; but these have not proved successful.

In the spring of 1846, a year after the publication of Downing's "*Fruits of America*," Jacob Smith, near Lockport, Will County, some thirty miles south-west of Chicago, brought scions of the Early May Cherry from Putnam County, Ind., and grafted part of them on Morello stocks in the orchard of Mr. Bronson. Three or four years later, Mr. J. W. Wakeman of Cottage Hill, sixteen miles west of Chicago, obtained scions from Mr. Bronson, and commenced propagating them in the nursery, by grafting on the Morello suckers, under the name of Early May. At this time, I resided in the neighborhood of Mr. Wakeman, and had the old Kentish which I brought from New York, and at that time supposed to be identical with the Kentish of Downing, but, on comparing it with the Early May, found a wide difference, not only in habit of the tree, color of fruits, but in time of ripening, and productiveness.

About 1855, a cherry described by Downing under the name of Early May was sent West, and supposed to be identical with what had now become known as the Wakeman Cherry; but it proved to be quite a different cherry, and of no practical value.

Another cherry was sent out from the Rochester nurseries, under the name of Early Richmond, which proved to be the Montmorency, a Duke cherry. Mr. Wakeman set out a large orchard, and continued to propagate this cherry on the Morello suckers as the cherry began to attract attention; and the demand for the trees could not be supplied. Nursery-men and tree-dealers from the East claimed to have the same; and the result was, the West was flooded with the Early May of Downing and the Montmorency.

J. J. Thomas followed Downing in his nomenclature, but sent West the true Early May, under the name of Early Richmond.

On the appearance of Elliott's "*Western Fruits*," 1855, Mr. Wakeman changed the name of this cherry to that recognized in that work, — Early Richmond; by which name it is now generally known in the north part of the State. Thus we had three varieties of the cherry propagated and sold

for the Early May of the South, — Pie Cherry or late Kentish, Early May of Downing, and Montmorency ; and, to some extent, these errors are yet being propagated. I have seen the two latter mixed in the nursery-rows with the true Early May.

As early as 1856, Mr. Wakeman sent a large quantity of this fruit to the Chicago market ; and at this time there are large orchards of this cherry in the neighborhood, that send annually some thousand of bushels to market. In fact, it has become the great commercial cherry of the Northwest. In the orchards near Chicago, no other stock than the Morello will be tolerated, as it is supposed that this stock has a beneficial influence on this variety. In some places it is propagated by suckers, and by many these are supposed to be equally valuable ; but I am not aware of a close comparison having been instituted to determine this point for any length of time. In the south part of the State, large orchards have been set within the past two years, mostly worked on the Mahaleb stock.

I have fruited this cherry for the past thirteen years, and have had at least half a crop in the poorest season. Late frosts sometimes thin out the crop ; but the great danger is from excessive rain during the time of ripening, which induces the rot.

At this point the crop begins to ripen about the 10th of June, and lasts two weeks. The large English Morello, another very valuable cherry, is about one month later.

The Early May, when fully ripe, is a tolerable table-fruit ; but its chief value is for the kitchen. The pit is very small, and is easily taken out by a patent "cherry-pitter."

In orchard-culture, this fruit must have the best of care ; and then the sprouts of the Morello stocks are of little consequence, being as easily kept down as ordinary weeds. They should be grafted about two feet from the ground, so as to keep the heads low, for the convenience of picking. In grafting, a thin-bladed knife is used, so as to cut the bark instead of splitting it, as is done in apple-grafting. Budding is never resorted to in propagating on the Morello.

Along the eastern bank of the Mississippi and the Illinois Rivers, on the sandy bogs that cover the prairie drift, the sweet cherries have been more fortunate, and, in some years, produce good crops. But at Quincy, on

this soil, the May Cherry has proved highly satisfactory, and is taking the place of nearly all the other varieties for market. It is there mainly propagated from suckers.

In point of fact, west of the mountains, the Early May and large English Morello are, thus far, all the varieties, that have been freely tested, that have proved worthy of general cultivation in the commercial orchards.

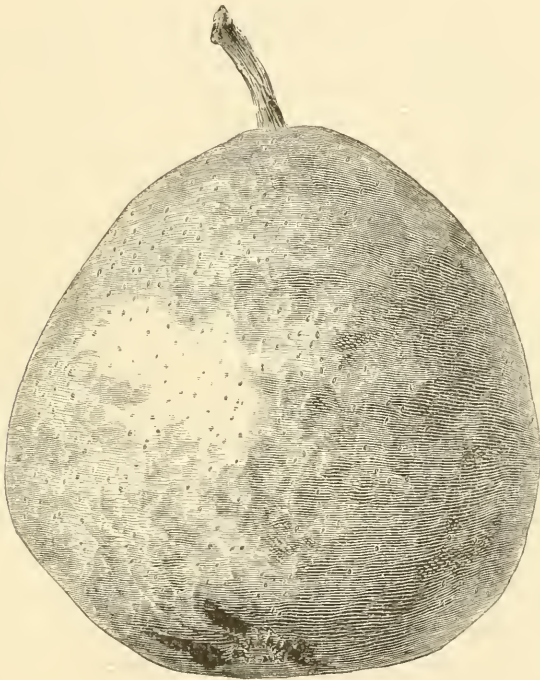
CHAMPAIGN, ILL., Aug. 17, 1867.

M. L. Dunlap.

RAISING SEEDLING LILIUMS. — Last year, I crossed *Lilium speciosum* with the pollen of two distinct varieties of *L. auratum*, both marked with dull crimson bands instead of yellow; and some fine pods of seeds were ripened on *L. speciosum*. The two varieties of *L. auratum* were crossed with pollen from *L. speciosum*, and they likewise ripened good seed to look at. All the seeds of the two sorts were kept separate, and sown in pans in a warm pit in March last. I was surprised to see no signs of any young plants appearing till it was far advanced in summer, and then only about seventeen showed their tiny leaves in the pans of the *auratum* varieties. Lately, a few of the *speciosum* seedlings have appeared above ground; and, on scratching down into the soil, I have found, in all the pans, hundreds of small bulbs, that have formed from the seeds, and never showed leaves at all, or at least till now. Raisers of lilioms from seed, if disappointed in their plants not appearing above ground, had, therefore, better examine the soil to see if any young bulbs are forming below. — *W. T., in Florist.*

THE SARAH PEAR.

SIZE medium ; form globular, inclining to turbinate, rather broad across the centre ; stem short, thick, generally planted without depression ; calyx medium, segments often abortive ; basin small, shallow ; color pale-yellow ; skin smooth, with a few traces of cinnamon-russet ; flesh yellowish-white, melting, very juicy, tender, and buttery, a little granulous at the core ; flavor



vinous, with a rich, honeyed sweetness, and a musky, spicy aroma. Season about the middle of October. Quality "very good," nearly "best."

This new American pear has fruited for many years in the collection of Messrs. F. and L. Clapp, Dorchester, Mass.; and was raised from seed about the same time as Clapp's Favorite. The tree is of erect habit, hardy, healthy, and productive.

Marshall P. Wilder.

THE KNOX FRUIT-FARM.

THE GRAPE-SHOW OF 1867.

JUNE and October are famous months with Mr. J. Knox ; for in them, respectively, he holds his strawberry and his grape exhibitions. In them he invites his horticultural friends to come and see the products of his strawberry-fields and of his grape-trellises. These now become the centres of attraction to horticulturists all over the country. Upon these occasions, all may go, not merely to see samples of the fruit tastefully arranged upon the tables at his warehouse at the city, as at any other horticultural show, but the visitor can go to the grounds where they are produced ; and there he can study the important characters of the plants and vines, observe the peculiar modes of treatment to which they have been subjected, and see for himself the wonderful health, vigor, and productiveness of some varieties, which would appear fabulous in narration ; and he can also discover the weakness, infertility, deficient health, or other defects, of some sorts which may have made a very respectable appearance, and have been highly lauded, when shown by the plateful at a horticultural exhibition. During the current month of the vintage, these grounds have been visited by many of the most prominent horticulturists of the country. Many have seen them for the first time, and have expressed their satisfaction and delight at the results produced ; and many others have been to refresh their memories of past visits, and to watch the progress of new varieties coming into fruit under the treatment and upon the soil of this locality. The writer belongs to the latter class ; and, having enjoyed the opportunity once more of seeing many of the comparatively new grapes in fruit, he proposes to present an abstract of his notes to the readers of the Journal.

The mode of preparation of the soil, the laying-out, the planting, and the culture, pursued by Mr. Knox, have been so often laid before the public, that they will not need to be again detailed, further than to state that a rather stiff calcareous clay loam is ploughed deeply, and planted with grape-vines, generally one year old, single-eye plants, that are set at a distance of six by

eight feet. Between these, in the wider space, two rows of strawberry-vines are planted, at about every twelve inches in the rows, which are two feet apart. All are cultivated together, chiefly by hand-labor, with the hoe, for the first summer. The vines are allowed to grow at random, and the strawberries are kept free from runners: sometimes the latter are mulched with old rotten manure that has been used in hot-beds. At the setting-in of winter, these are covered with clean straw to protect them from the effects of freezing and thawing.

The second season, the grapes are cut to two eyes, and the shoots are trained to stakes; the strawberries yield their fruit; the whole surface is kept clean with the hoe; and the third season, the trellis, made with vertical strips, is set up, and the two canes grown the previous year are laid in horizontally after having been pruned to about three feet. They are then allowed to bear a moderate crop; and in future years the alternate spur and cane system is pursued, leading the shoots up the vertical strips, which are nine inches apart, and six feet high. Sometimes, instead of a new cane, an old stem with spurs is retained for fruiting.

The first thing that strikes the visitor is the extreme vigor and healthfulness of the vines: this is no doubt owing in great part to the extensive plantations of the "noble Concord," which is here spoken of as *the grape*. Some other varieties, however, rival this in their healthy and vigorous appearance: among these, the Ives, Hartford, Norton, Herbeinont, Lenoir, Alvey, Taylor, Rentz, and the new seedlings of the Concord, Black Hawk, and Martha, may all be considered rivals, on account of their beauty and vigor as noble plants.

The Concord may well be the pet and favorite upon these grounds, as it continues to grow and to bear most abundant crops of berries that make the trellises look black with fruit, and this, year after year, without any failure. One plat, that furnished a very abundant first crop in 1865, was so laden, that practical vine-dressers prophesied it must fail the next year; but, to their astonishment, the vintage of 1866 was still more heavy. And now the same vines are indeed a spectacle. Viewing the rows from the end, the trellis resembles a solid column of rich clusters. Well may the proprietor feel satisfied with the result of his planting of this variety. Whatever the opinion of man of "refined and educated tastes," this vine has here proved

itself a paying investment. Though not equal in quality to some other grapes, it is found to be very acceptable to a large class of consumers, who eagerly purchase it at home and in distant markets, paying a high price for the fruit.

The plantations of Ives rival those of the Concord in their healthful and vigorous appearance. The vines are still young, but are beginning to bear ; and the fruit is highly satisfactory both for market and for wine, but especially for the latter purpose.

The Rentz vines are still young, and without fruit : but their beautiful, vigorous growth, and perfectly healthy foliage, make them rank with the class of vines that may be recommended to planters. The qualities of the fruit for table and wine are promising, and worthy further trial.

Here as elsewhere, especially in the West, the Norton takes high rank as a healthy, productive, and vigorous grape, yielding a large vintage of generous red wine, that is only too heavy for every-day table-use.

The Herbemont shows its extreme vigor in vine and foliage, and is very productive of large, crowded clusters. Though the berries are rather small, they are delicious and refreshing. Being essentially juice-grapes, their yield in wine is large, and very fine.

Elsinborough, belonging to the *cordifolia* class, is sufficiently vigorous, and reasonably productive. The bunches are loose ; the berries small, but most deliciously rich and sweet ; attractive alike to birds, and to those persons who have a refined taste for nice things. The proprietor stated that he did not grow this variety for the market : it was never sold, but retained for his own use and that of his friends. Happy the man who has his trellis full of such !

Alvey is a vine that should take similar rank, only that it is worthy of higher honor and position. The habit is that of a free-grower, with thin but abundant and healthy foliage, of the kind and color that is truly refreshing. The bunches are of good size, not crowded nor straggling, rather well formed ; the berries of medium size, or below, round, black, having a very thin skin, no pulp, few seeds, but, oh, how much, and what delicious, sprightly juice ! This is essentially an amateur fruit, suited to the most refined taste ; but it will not bear transportation to market. The wine produced from this variety is very fine ; but the crop of fruit is not always abundant.

The lovely Delaware, pride of American grape-lists, is this year doing all that can possibly be required of it. Ripening early, bearing profusely, perfect in every respect, and furnished with abundant and healthy foliage upon a thrifty growth of wood, the trellises of this variety have yielded a glorious vintage. The mildew has not affected the vines. Even the voracious "thrips" (*Tettigonia vitis*) that often have swarmed upon them, reducing their elegant leaves to shadows, have this year kept away; and hence the fruit is well ripened and delicious. Would that it could always be so well behaved!

The Clinton modestly prefers its claims to public favor; and it is to be hoped that this vine, which possesses so many excellent qualities, will yet be recognized as something more than a "wild frost-grape." It is perfectly hardy, and almost universally healthy and vigorous, holding its verdant foliage until killed by severe frost. It is abundantly productive of nice, compact bunches. Its only fault is that it colors early, and appears to be ripe before it is so; and of course, if then plucked, it is sour and acerb: but if allowed to hang until ripe, until the shining black berries have been transformed into a rich blue from the exudation of their heavy bloom, it will be found that the acid has all been transformed into sugar, and that the grape is one of the sweetest in the catalogue.

The crop of Creveling is here very heavy, and some of the bunches are compact and handsome: the trellises are really burdened with the crop of this excellent grape. The usual deficiency and looseness of the clusters of this variety have been attributed to a defective fertilization at the time of blossoming. Vine-dressers should observe the inflorescence more closely: endeavor to discover whether the cause of the difficulty really lies in some inherent defect of the blossoms, or whether a deficiency of the pollen may not be supplied by other vines trained near them that will blossom at the same time with the Creveling. This variety is one of great value both for table and for wine: and the complaint of straggling bunches should be met, if it be possible; for, in its usual condition, the eye of the market is not satisfied with it for a table-grape, for which its spicy richness and melting pulp so highly commend it.

The Hartford, Perkins, Louisa, Northern Muscadine, North Carolina, York Madeira, and others of that class of early market-grapes, were all of

them still to be found hanging upon the vines, though stale and shrivelled at this late period of the season. They are grown rather as curiosities to mark the advance of grape-culture than as a source of profit ; but they all came into play to supply the demand for the earliest market, and are not without their value for this purpose. The Hartford, indeed, is the source of considerable revenue. Large and handsome bunches of this variety were retaining their shrivelled berries with considerable tenacity.

The Diana, which is quite a favorite in many parts of the West, is here highly valued for its keeping properties. The thick skin preserves the pulp from injury ; and the fruit is easily kept until the holidays, when fresh grapes command a high price. From some cause not manifest, the grapes of this variety were not well colored at this vineyard ; though the foliage is apparently healthy, and the growth of vine perfect.

The Taylor is bearing well on young and old vines ; the bunches rather small, but crowded and ripening well. The excessive growth of this variety seems to interfere with its fruiting and with the size of its bunches. The wine made from this nice juicy grape is so promising, the vine is so vigorous and healthy, and the fruit is so pleasant, that it would be very desirable to discover some mode of managing the vine to make it more satisfactory in its fruitage. It is suggested that different modes of training may produce the desired result.

The Oporto is still allowed to remain upon the trellis where it was first planted ; and there the bunches are likely to remain, unless occasionally pulled as a curiosity, or to present to a visitor as a foil, or contrast, to something of greater merit.

NEWER GRAPES.

These are all introduced as rapidly as possible, not merely into the propagating grounds, but choice plants are at once set out in the vineyards, where they may be thoroughly tested ; so that these grounds have become a favorite resort for study, at least for observing the adaptation of this soil and climate to those that have been tried.

The Iona, when established, appears reasonably free from mildew, and sufficiently vigorous, but has not been very productive, ripening at mid-season, and, from some cause, coloring imperfectly.

The Israella, on vines of the same age, is still less burdened with fruit, showing only a few bunches. This may be owing to the incompatibility of the soil and climate ; for it is a common observation, that, in the nursery, the young plants often cast their leaves at midsummer as badly as the Delaware and others that are peculiarly subject to mildew.

Close beside these vines are trellises densely covered with the abundant fruit and foliage of the Clinton, Norton, and an immense crop of Maxatawny. This last-named grape is now maturing its fruit nobly, some of the clusters bearing as high and rich a color as could be desired.

The Martha is doing quite as well, on vines of the same age, the third year ; and is indeed one of the most promising of the white grapes, since it appears to have all the vigor and productiveness and hardiness of its parent, the Concord.

The Rogers's Hybrids are here fruiting abundantly on a great many of the different numbers ; affording a fine opportunity for copious notes, that will be produced upon another occasion.

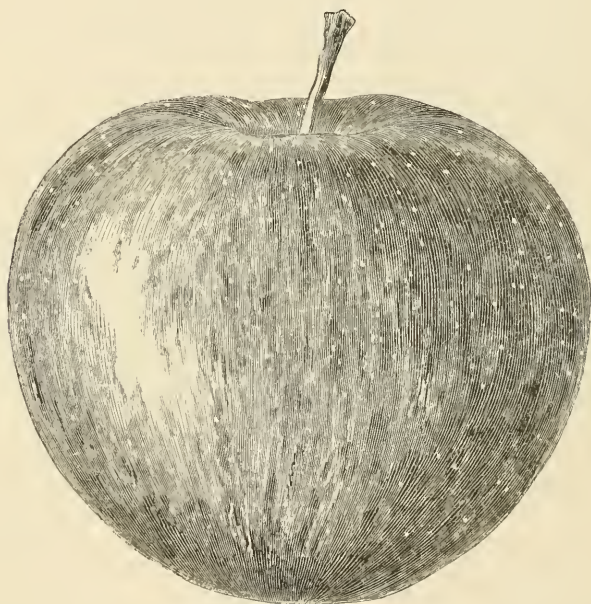
Many other varieties are also in fruit ; but they are necessarily omitted upon this occasion, for fear of extending this communication to an undue length.

A new plan of treating cuttings of hard-wood plants was found to be extensively practised here,—no patent,—which may be explained at another time.

WINTER PEARS. — The remark is often made, that there is no demand for pears in winter ; and, if kept until that season, they will not sell. This may be true ; but it is certainly very strange : for everybody must acknowledge that a rich, melting pear is better than an apple at any season of the year, and yet there is a demand for apples for the dessert. Is it not because pears are scarce and high, and above the reach of the great mass of people ? Produce them in sufficient quantities, and offer them at moderate prices, and there will be no lack of customers.

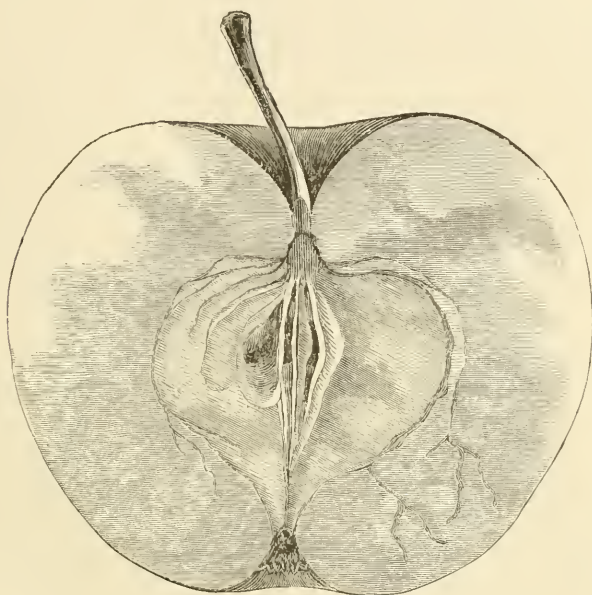
COOLEIDGE'S FAVORITE.

WE know but little of this fine variety, except from its appearance on exhibition the past season, and from specimens tested by us. It is said to have originated in Cambridge, Mass. ; taking its name from the person who raised it. It is of medium size, tapering quickly ; smooth and regular surface and outline ; ground-color deep yellow, splashed and marbled with red on the shady side, but becoming very brilliant red on the sunny side, diver-



ging rays of russet about stem, with faint whitish speck or dots over its entire surface ; stem rather long and slim, set in a broad and deep cavity ; calyx set in a moderately-shallow plaited basin ; flesh fine-grained, tender, and juicy, with pleasant sub-acid flavor, faint streaks of red running into the flesh of the apple. Time of ripening, last of September and first of October. From what we saw of this apple, we were quite pleased with it. We do not know if it has ever been disseminated.

This apple is good enough in quality for the dessert, while its very handsome appearance will sell it in any market. A red apple will always sell quicker and at higher prices than those of any other color. We believe it



to be a good bearer in odd years ; which is quite an advantage in some parts of the country, where the markets are often glutted with this fruit in the even years. We hope to obtain further information concerning this fruit next season.

KEEPING FRUIT. — To secure the long-keeping of fruit, a cool and dry atmosphere is indispensable ; not so cold as to freeze, nor so dry that the fruit will shrivel. When winter-pears are wanted for the table, they should be brought into a warm place, where, after a few days, they will become fit for eating. Apples will ripen well enough in the cellar. Grapes will keep well where the temperature is favorable to the long-keeping of other fruits. A cool, dry temperature is the special merit of the patent fruit-houses.

THE PROFITABLENESS OF FRUIT-CULTURE.

It seems hardly necessary, at this late day, to write an article in proof of the text with which we have started ; and yet we believe there is much remaining to be said in regard to the profits of successful fruit-culture. We do not wish to mislead our readers by giving, as is often done, the product of some remarkable tree or vine, and arguing from that how much fruit can be produced on an acre. We know grape-vines that are said to yield a thousand pounds yearly of excellent fruit ; and, as eight to ten hundred grape-vines can be grown to an acre, consequently the yield must be eight hundred thousand pounds, or four hundred tons : when the truth is, that three or four tons of good grapes would be a fair *average* yield. Neither would it be any nearer the truth to give the product of a pear-tree as twenty-five bushels, — the quantity we have known to be raised on a single tree, — and say, as an acre will afford room for two hundred trees, the yield of fruit must be five thousand bushels, which, at three dollars a bushel (a reasonable price, surely), would be fifteen thousand dollars. Now, it is not necessary to resort to any such mode of reasoning to prove the case strongly enough to satisfy any reasonable person. All fruits are not alike profitable, nor are the same fruits equally profitable in every part of the country : consequently, each section should cultivate that which is best adapted to its market, and will give the best returns.

Formerly the facilities for transporting fruit to a distance were very poor, and few would have dreamed of sending the most perishable of the summer fruits hundreds of miles to market ; yet now, under the new *régime*, strawberries are picked in New Jersey in the afternoon, and the next day they are on the tea-table of the Boston merchant. The same is true of blackberries, raspberries, peaches, and other fruits, that are shipped daily, in their season, in immense quantities, from the place of their growth to the best market. Were it impossible to do this, we could not, with so great confidence, declare the profitableness of fruit-culture. What would it avail the Jersey farmer, if his vines were loaded with the finest and largest strawberries, if his only market were the villages of his own neighborhood ? It may be said that he would not enter upon its culture, or, at any rate, not so far

from a large city, were it not for the conveniences of getting his crop easily and quickly to the consumer. What is true of the East is more true of the West, which yearly sends her grapes, apples, and other fruits, to even the extreme Eastern markets. Granting, then, there are immense portions of country so situated, that the products may easily be forwarded to the consumer, the question will be asked by every person about to enter upon the work of fruit-raising, What can be grown most profitably? The first fruit of the summer is a favorite one with all classes who can afford to use it: and strawberries, taking the years together, are a profitable crop; none more so, perhaps. The Eastern markets have never been so fully supplied that the laboring-man could afford to buy for his family; and, latterly, the price has ruled high, averaging twenty-five cents per box of a quart each. At these prices, it is not an uncommon thing to realize ten to twelve hundred dollars from an acre of strawberries, and that, too, of the Hovey's Seedling. If the average product should command two-thirds that sum, it would still be a profitable one; for we take it that there are not many acres situated at a distance from a market that will yield such an amount of money when planted to vegetables or field-crops. The work of cultivating this crop is not the most laborious for the owner, while a large part of the work can be done by women and children. The demand is unlimited, and has never yet been fully met; so that if the business be one giving a large profit, as we have briefly attempted to show, then it is quite safe to extend it. After strawberries come the raspberries,—an excellent fruit, that has, of late years, been somewhat neglected. Its season, coming, as it does, just as the strawberries are finished, renders it valuable in making up a succession of fruits. They are more easily grown than the strawberry, and will produce good crops even under the shade of trees. One reason why this berry has not been produced in considerable quantities is the fact, that, at the North at least, the canes need to be covered in winter to give the best results. This is not a great job, however; and should not deter a single person from entering upon the cultivation of this fruit. They can be sent to market in the same way as the strawberry, there being no extra expense for boxes or baskets. The yield is often large, and the fruit sells for nearly as much as the strawberry. The best information we are able to get, added to our own experience, all goes to prove that it is a profitable fruit to raise. The

blackberry follows the raspberry, and is a very fine, healthful fruit ; and can be grown with great profit, as has been fully demonstrated, where the soil is well adapted to its cultivation. Some astonishing statements have been made from time to time concerning the yield of this most excellent fruit. The demand for it has never yet been met, and there need be no fear of glutting the market for years to come. The currant is one of the most profitable of the small fruits, though there have been times when it did not pay a large profit. The introduction of the larger varieties has given an impetus to the culture of this fruit ; and the demand from the market-gardeners for the plants only confirms us in the belief that its cultivation is remunerative.

For gooseberries we cannot say much, because the demand is not large for them when green, and still less when ripe. It seems to us that this fruit is not fully appreciated, though we are aware that the largest and best English sorts do not flourish here. We think, however, if our fruit-growers would give more attention to this fruit, it would come more into use, and prove more profitable. The peach is the great crop of the State of Delaware, and parts of some other States ; though the crop is not so satisfactory as in former years, there being more disease and other drawbacks to contend with in its culture. There is no more luscious fruit in the whole list than this. It should hang on the tree until fully ripe to attain to its highest perfection in flavor ; but this cannot be done where the fruit is to be sent to a distant market. The past season, fair peaches brought from four to six dollars a basket in Boston and other Eastern markets ; and the supply was not great at that. Now, where this fruit succeeds, it can be grown quite cheaply, and yet pay a fair profit ; but, when they bring such prices, it is a very profitable business. The peach, to flourish well, requires a good, warm, and rather dry soil, in a climate where the winters are mild. Peaches can be raised to great advantage, even beyond the farthest point from which they can be transported to market while fresh ; since they can be dried and shipped at the convenience of the producer, always commanding a good price. They may also be canned in immense quantities, and then sent to any part of the world. The demand is great, the prices good. To carry on this branch of the business successfully, the house for canning should be in the peach-country, where the fruit can be had in the freshest

and best condition, and at reasonable prices. There are thousands of acres of land that can be bought for mere nominal prices, that are well suited to peach-culture, waiting for the enterprising young man to enter in and plant trees, and accumulate a competency. There is, perhaps, a larger margin for profit in raising this fruit than in any other, except grapes, and possibly strawberries. The raising of pears is a profitable branch of fruit-culture in those parts of the country adapted to it. There are places, where, strange as it may seem, the pear proves a failure : the fire-blight and other diseases of the tree, or the failure to get good fruit, render it undesirable to attempt to raise pears for sale. If the tree flourishes, and produces good fruit, it finds a ready sale at remunerative prices. There seems to be but few pears raised in the country, except in the vicinity of cities and large towns. It has proved, in some locations, a surer and better crop than apples, and is generally quite profitable. If one would select varieties that make the best returns, he should avoid the early summer and the winter sorts, and grow largely of such varieties as mature during September, October, and the early part of November.

The grape-crop next claims our attention ; and for this we must speak a good word on the score of profit, whether considered for wine-purposes or the market. Much will depend upon the location and section of country ; for the effect on the grape of difference of soils and location is more apparent than on any other fruit. Presuming that the vinist has made a wise selection as to soil, location, and nearness to market, he may plant grape-vines of the best varieties for market-purposes with the fullest confidence that his returns will be satisfactory, and probably greater than he could realize from any other crop. An intelligent grower told us a few days since that he could raise Isabella grapes in New York, and deliver them in Boston, for three cents a pound, and make money at the business ; and at six cents he could make a fortune in a short time. We think he was too sanguine in regard to the profits of the business ; though, at the last-named price, it might do. The fact is, at the present time, Catawbas and other good grapes are selling for twenty and twenty-five cents a pound ; which price, after deducting all possible expenses, will show a balance on the right side. Some have expressed the belief, that, as so many were

entering upon grape-growing, the market would soon be surfeited with this fruit, and loss would ensue to the grower. We remember that twenty-five years ago, when few grapes were produced, good Isabellas sold for six to ten cents a pound ; and now, when a thousand times as many are raised, they bring the prices we have given above. The fact is, our country is large, there are a great many to consume, and the consumption of fruits and vegetables is enormous compared with former times. Almost every person in the community who can afford it has fruit on his table daily, where, years ago, it was never seen, nor scarcely thought of. Tons of grapes are sold in our streets by peddlers, where formerly never a bunch was seen ; and the demand for fruit will continue, and even increase, so that we need not look for any great reduction of price for several years. We repeat, then, that grape-growing is one of the most profitable branches of fruit-culture, and would be with the fruit at half the price it now commands. When it falls to a low price, the wine-makers stand ready to purchase and use the whole crop. Our advice to a young man who wanted to engage in fruit-growing would be to look over the country, select the best grape-land, and plant a vineyard ; and he will in a few years be able to sit under his own vine and fig-tree in a double sense.

Of apple-culture we cannot speak so confidently, certainly not for certain parts of the United States, as it is well known, that, through all the Eastern section, it has been nearly a failure for several years. In New York and the West, the crop has been generally good, and prices well up ; the Eastern market absorbing all the surplus fruit. Much money has been made in times past from apple-orchards ; and when we remember that it is one of the most valuable of fruits, all things considered, we must readily see that the demand must always be very great, and that, if they cannot be produced and sold as cheaply as formerly, then the consumer must pay a larger price for the apples he insists upon having. The same advice will apply in regard to the cultivation of this that has been given in relation to other fruits, — select a proper soil and location somewhere near a line of communication, plant an orchard, and always take good care of it ; and a fair reward is almost certain to follow, except, possibly, in portions of New England. Where land is worth five or six hundred dollars an acre near

the city, it would not seem to be worth the while to plant an apple-orchard ; for the land is worth more, possibly, for raising vegetables or the smaller fruits for the near market.

It will be seen by this brief glance at the profitableness of fruit-culture that there is no branch of horticulture or agriculture that offers a better field for investment than that of fruit-growing ; while it is probably one of the most interesting branches of culture.

ROGERS'S 15.

It has been reported that Mr. Rogers regarded this grape as the best of all the varieties that he had originated and sent out. It is a red grape, of good size in berry and bunch when well grown, resembling somewhat, in color, the Catawba. It is a very rampant grower, and will not bear close pruning. It is quite impossible to grow it so as to secure a fair crop, if it is cramped or confined as many other varieties are. There are few, if any, grapes on the list more inclined to make wood than this. We have fruited it for several years, but with poor success ; our system of spiral training and close pruning not being well adapted to its habits. The bunches have been quite small, containing from six to ten berries only. They have usually ripened, but have never been of first quality. The skin is thick ; the pulp hard ; the flavor rather spirited and pleasant at first, but leaving in the mouth an unpleasant, foxy, peppery taste, rendering it very disagreeable to those of cultivated taste in such matters. If this variety is to be grown, it should have plenty of room, either on a trellis, or it should be allowed to run into trees. We have known a vine of it to produce wonderfully when allowed the whole side of a house upon which to extend itself. It is worthy of trial in the West and South-west ; for, in a more favorable climate than that of New England, the pulp would be reduced very much, and the foxy flavor would nearly disappear. It is a spirited grape, and will, without doubt, yield a much better wine than is now made from many of the grapes enjoying a better reputation. It withstands the mildew very much better than many of Rogers's numbers. We shall be glad to hear from those who have cultivated it under the most favorable circumstances.

JUNE GRASS, OR KENTUCKY BLUE-GRASS (*Poa pratensis*).

THIS common species, one of the best for lawns, is well known throughout the northern parts of the country. It flourishes remarkably in the climate and soil of Kentucky, where it affords a luxuriant winter-forage; and hence it is often popularly called after that locality. It is desirable either as a pasture or a lawn grass, but not so well adapted to mowing as many other species, because it sends up but one flowering-stock in a year, and that rarely over fifteen inches high; so that the yield is usually light as compared with many other grasses. As a lawn-grass for forming a thick, soft, and closely-matted turf, it is, perhaps, unsurpassed.

The root of June grass is perennial and creeping; the stem erect, smooth, and round; the leaves slightly rough on the edges and inner surface; the panicle spreading, diffuse, and erect.

June grass grows well in a great variety of soils, varying in its size and luxuriance according to the quality; but it does best on a limestone formation. It requires two or three years to attain its perfection, and form a close thick sward; and will improve even after that. It is not, therefore, well adapted to alternate husbandry, or where land is to come under the plough in the course of a regular rotation. It will do well in partially-shaded locations; will endure the rigors of a cold winter-climate; but is easily affected by drought. It starts slowly after a close cut-

ting ; but its later growth is luxuriant. It blossoms early in June ; and, for hay, should be cut soon after.

June grass should be distinguished from blue-grass proper (the *Poa compressa*), a hard, wiry grass, with a flattened stem, common on hard, thin, dry soils, and flowering in July.

Charles L. Flint.

WEEPING-TREES.

THERE are no more picturesque objects upon a lawn or in a grass-plot than the low weeping-trees, of which a few species may be found in every nursery.

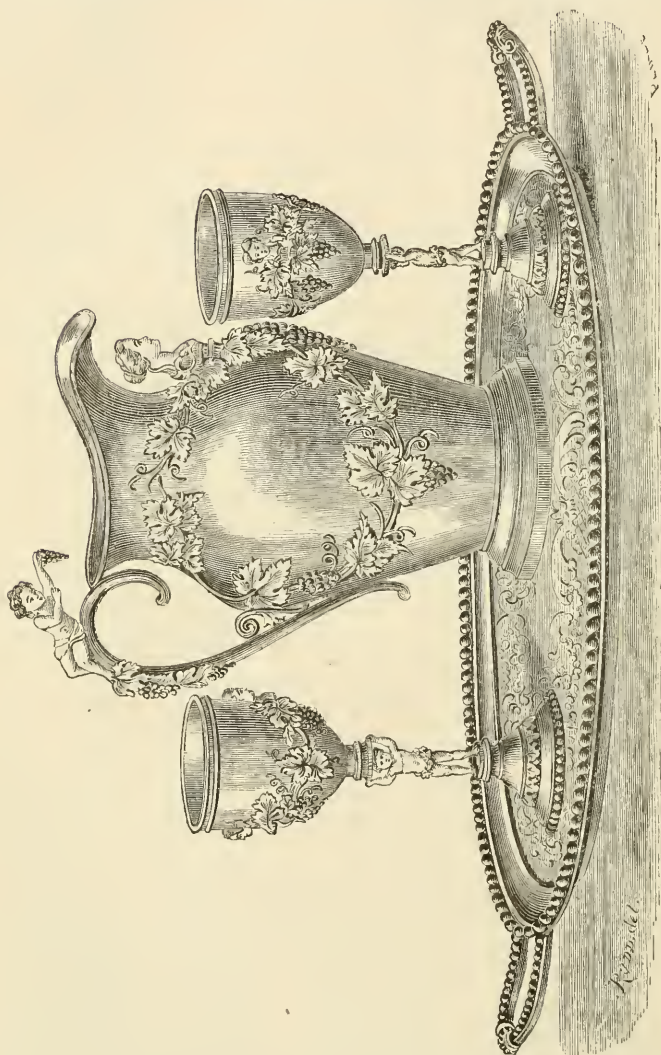
Of these, perhaps the Kilmarnock Weeping-willow, or the Bird-cherry, are good examples, — both very desirable and hardy, and possessing every desirable characteristic for ornamental gardening. There are, however, a class of hardy trees, or rather shrubs, which are very little known, but which, from their singular and often almost grotesque growth, are both curious and beautiful, and in every way worthy of extended cultivation. These are the different species of the *Caragana*, or Siberian Pea-tree, and the allied genera *Calophaca* and *Halimodendron*. Of the former, we find in every nursery one species, — *Caragana arborea*, a pretty tree of the second class, with fine pinnate foliage, yellow flowers, and pyramidal habit ; but we seldom see the more humble species, while the *Calophaca* and *Halimodendron* are wholly unknown.

Of the *Caragana* there are many species, generally natives of Siberia, and mostly low-growing shrubs, which, in their natural state, would hardly be desirable in the garden. If, however, they are budded on the stock of *C. arborea*, they become very beautiful trees, generally weeping, and displaying their profusion of yellow flowers to great advantage.

Of these we may mention *C. jubata*, *arenaria*, *fastigiata*, *altagana*, *frutescens*, and *Chamlagu*. *Calophaca Wolgarica* is also yellow-flowering, and is very curious and beautiful. *Halimodendron argenteum* — the salt-tree — has beautiful silvery foliage and pink blossoms. All of these are worthy of cultivation, and are singularly picturesque and effective.

PREMIUMS FOR GRAPES.

WE are pleased to be able to give engravings, by our own artist, of the



beautiful pieces of plate that have been so generously offered as prizes,

by the Longworth Wine-house, for the best varieties of grapes both for wine and table-use. These prizes are open to competition to all the growers of the United States. The exhibition is to be held at Cincinnati, O., the twenty-third day of September next. We annex a copy of the circular issued by the Longworth Wine-house :—

To the Wine-growers of the United States, through the American Wine-growers' Association of Ohio,—Feeling deeply interested in the improvement of our native grapes and wines, we offer the following premiums : A silver pitcher, two goblets, and waiter, to cost not less than three hundred



and fifty dollars, as the first premium ; a silver cup, to cost not less than a hundred dollars, as a second premium ; and a silver cup, to cost not less than fifty dollars, as the third premium.

The first premium to be given to the best general wine-grape of our whole country. The second premium to be given to the best variety of grapes for wine-purposes in the State of Ohio, provided it is not awarded to the grape that receives the first premium ; in which case, it will be given to the second best wine-grape in the country. The third premium to be given to the best table-grape, for general purposes, in the country.

Our requirements are, that the plants, when generally cultivated, shall be perfectly healthy, hardy, and productive ; and the fruit shall produce a

wine of good quality as to flavor, strength, and quantity. The fruit shall be shown at the coming Fall Consolidated Exhibition of the American Wine-growers' Association of Ohio, and Cincinnati Horticultural Society, in quantities of ten pounds or more, with samples of the wines from the competitors for the first two premiums, if practicable.

The committee to be composed of the Hon. Marshall P. Wilder of Boston ; Solon Robinson, Esq., of New York ; a member to be designated by the Lake-shore Grape-growers' Association at their next meeting ; a member to be appointed by the American Wine-growers' Association of Ohio ; and Dr. C. W. Spalding of Missouri.

At the meeting of the committee to award premiums, in case they are not all present, the members present to fill the vacancies. The award of the committee to be final.

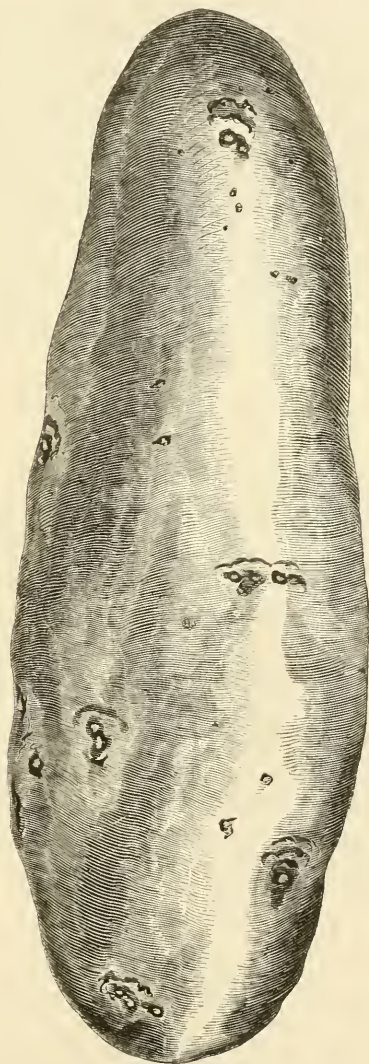
LONGWORTH WINE-HOUSE.

CINCINNATI, O.

The Lake-shore Grape-growers' Association have appointed J. E. Mottier, and the American Wine-growers' Association E. A. Thompson, their president, to represent them on the committee, — making the requisite number to award the premiums ; and to them will be submitted the grapes and wines that may be offered for competition. The well-known character of the gentlemen constituting the committee is sufficient guaranty that entire justice will be done to all who enter the lists. It is fair to presume that any grape that shall receive their approval may safely be planted by the grape-growers of a portion of the, if not of the entire, United States. The interest felt in the grape in all parts of the country is so great, that we doubt not there will be sharp competition among the growers to secure the post of honor for their favorite grape. We wish the enterprise success.

THE CONFEDERATE POTATO.

A NEW variety, of French origin, sent out the past season by the Messrs.



Vilmorin, Andrieux, and Co., seedsmen, of Paris. It is not a very early

variety. The tubers are of a large oval or oblong form ; eyes numerous, but not deeply set ; skin yellowish-white, and very smooth ; flesh white when cooked ; quality fair, but inferior to many other sorts for table use.

The tubers closely resemble the old Gillyflower or St. Helena varieties, although readily distinguished in vine and foliage from those sorts. It is a remarkably healthy variety, comparatively free from disease, and very productive. From eight medium-sized tubers which I received from Messrs. Washburn and Co., who imported them, the yield was five and a half pecks of good sound potatoes, besides several stalks pulled up for trial during the season, of which no account was made. *C. N. B.*

NEWTON, Nov. 25.

DWARFS AMONG STANDARDS.

MOST of the writers on pear-culture advise setting dwarf pear-trees among standards, and the majority of orchardists have adopted this course ; but some have come to the conclusion, from actual experience, that it is not a good way to plant. If they are set between the standard-trees, the latter will, in a few years, crowd and shade them so as to materially injure them. If they are allowed to root from the pear, they cease to be dwarfs, but will have no room to grow as standards, because a sufficient number of such trees have already been planted on the land. There is but one good reason for so planting ; and that is, that, as the standards are planted fifteen or twenty feet apart, the space between would, unless used for dwarfs, remain unoccupied for years. There are strong advocates of both modes of planting. Let us have the results of the experience of growers in different parts of the country.



NOTES FROM ABROAD.—We are happy to be able to give another letter from our esteemed friend and correspondent, the Hon. Joseph S. Cabot of Salem, who ranks among the first horticulturists of the country, and who is fully competent to observe and appreciate the beautiful and useful wherever he may travel. We hope to hear from him often, as we believe his letters will prove very interesting to all our readers, and especially so to those who enjoy the honor of his acquaintance.

To the Editor of "The Journal of Horticulture."

Sir,—When I said, as I did in my last, that I thought the beauty of English scenery was somewhat dependent on the fertility of its soil and its high cultivation, I did not, of course, intend to express an opinion that these alone were sufficient for a beautiful landscape. On the contrary, fertility and cultivation alone, without any adjuncts, becomes wearisome and monotonous. With no variety, the eye becomes tired of luxuriant vegetation, and desires something to break the continuity of the view, and upon which, for a time, it may repose. A broad, fertile tract of country, no matter how great its fertility, without trees or mountain, is wearisome to the eye; but plant the same with trees judiciously and artistically arranged into groups and masses, and it becomes to it a source of never-ending delight. In rural scenery, trees usually form one of its most, if not its most, attractive features; and no landscape, whatever its merits in other respects, can afford to dispense with them: their absence produces the feeling of a want that they alone seem capable of supplying. But if, under conditions otherwise favorable, trees are important, if not necessary, under another and unfavorable aspect they become absolutely indispensable,—it may be to hide deformity

or disagreeable objects, or it may be by themselves to create objects of beauty in a view, that, without them, would be repulsive. In English scenery, the fine trees constantly to be seen, whether planted singly, in avenues, or grouped in masses, constitute one of its most pleasing features ; and the sylvan scenery of the parks of the gentry, often of large extent, intersected with carriage-roads and foot-paths, arranged according to the shape and form of the land in a manner best to display and bring under notice its most attractive features, or when a wide prospect can be obtained to bring it into view, forms a beautiful landscape. In the larger places, and where their cost would not be taken into account, architectural decorations, as gates, lodges, and bridges, in harmony with the character of the house and grounds, are often made use of to add to their attractions. The present system of landscape-gardening, as applied to what are commonly designated "pleasure-grounds," that consists in laying them out with walks and drives, and arranging their improvement in accordance with the natural features of the scenery, — sometimes called the natural method, in contradistinction to the artificial method of straight avenues, with clipped hedges, and trees trimmed and formed into unnatural shapes, having in the arrangement no regard to the character of the grounds, — may be said to have had its origin in England, and to have been there first practised ; and it is not unusual to hear grounds in other countries, laid out on this system, designated as English gardens.

The forest and ornamental trees most common in England are, some of them at least, of the same species as those most usually met with in the eastern part of the United States, although not always of the same varieties ; some of them differing somewhat in shape or foliage, yet in other instances appearing identical in variety. Those most common are elms, oaks, beech, maple, birch, horse-chestnut, willows, and poplars ; the three first named being, perhaps, the most so. As specimens of the English varieties of most of these trees are not unusual in the United States, any attempt to describe them, so as to point out wherein the difference between those of the same species in the two countries consists, would be superfluous, unless it be to say that it seemed to me that the common English oak was more symmetrical in shape, and had a more rounded head, than the American species. It may be that in this opinion I am mistaken, and that it was only some particular individuals, that were brought immediately under my observation, that were thus distinguished. For ornamental purposes on groves and avenues, the elm and oak are everywhere favorites. The beech too, with its smooth, light-colored trunk, and dark, glossy foliage, is a very fine tree. An avenue of beeches of great size in Studley Park, Yorkshire, were, as I now remember, among the finest trees that I saw in England. The white birch, either by itself or mixed with other trees, though not growing to a great size, is often quite ornamental ; and the horse-chestnut is often used to good effect. Both in England and on the Continent, but especially on the Continent, I think that more use is made of the horse-chestnut than with us, both in avenues and clumps ; and it is well adapted to the purposes for which it is used in Europe. It is certainly a fine tree when full grown, and, when covered with its large flowers, very beautiful ; the red-flowering variety, especially, pro-

ducing a brilliant effect. In New England, the horse-chestnut is most generally planted by the sides of the street, or near houses, for shade ; and it does not seem to me well suited for this purpose. Its thick, close foliage makes so dense a shade, as to too much exclude air and light when protection from the sun only is desired. The trees of England do not have, I think, for size or beauty, any superiority over those of the United States of the same species : indeed, I am not sure that a comparison between those of the two countries would not be in favor of the latter. It certainly seemed to me that I had seen larger and finer individual trees in the United States than I ever did of the same kind in England. This superiority struck me especially as more marked in some kinds of hardy evergreen-trees, as the Norway spruce for example, perhaps than in any other. It has never been my fortune to see specimens of this tree in England at all equal to many that I have seen of it in America. The gay hues and deep tints, that, instead of green, the foliage of the American forests assumes after the first frosts,—thus making the transition of the seasons from summer to autumn, and making of the wooded hillsides, as they lie in the warm October sun, with their golden yellows, rich browns, and bright scarlets and crimson, a most gorgeous picture,—can hardly be said to have a counterpart in England. Not but that, at the close of the year, the foliage there, as decay commences, takes other colors than its usual green ; but these colors are almost exclusively yellows of different shades and browns : while, the scarlets and crimsons being almost wholly wanting, the picture formed by its forest-scenery is much less brilliant than that of America. But if—which I scarcely dare assert—a comparison of the forest-trees of America and England should, as regards their size and beauty, be in favor of the first-named country, and if the brilliant colors of its autumnal woodland-scenery are wanting in that of England, in one respect, at least, England has greatly, in relation to her trees, the advantage over the eastern part of the United States. Under the milder climate of England, many trees thrive and flourish that would hardly endure the rigors of a New-England winter, or the great alternations of heat and cold there so common ; thus permitting in England the use, in planting, of a greater number of varieties of trees, and giving the advantage, for ornamental purposes, of a greater variety of shapes and foliage. The yew, for example, to take only one of these, thrives and flourishes in England, and is, from its large size, very dark-green persistent foliage, frequently used there in parks and other grounds with good effect, but is, so far as I am aware, wholly wanting in New England, and could not, I suppose, be there acclimatized. I know that the yew, from its dark, funereal aspect, is generally associated in our mind with melancholy subjects, and is thought to be more fitting for church-yards than pleasure-grounds. Yet it is frequently a fine tree ; and I remember a park in Shropshire, celebrated for its beauty, where some fine yew-trees were by no means its least attractive feature. The yew is an extremely long-lived tree : one at least, to which my attention was called, was said to be more than eight hundred years old, and, though hollow in its trunk, seemed then to have sufficient vigor to last, if no accident prevented, at least another century. From the many varieties of trees in England wholly new to me, I was led to believe that the number

of indigenous varieties were much greater than I had previously supposed, or else that attempts were in progress to introduce and acclimatize many that were of foreign origin. Both is no doubt true; for among those that I did not know were some stated to be natives of other than the European continent. Among these last may be named the araucarias, — coming from South America, — remarkable for the singularity of its appearance rather than for its beauty, and that — although I believe that it suffered from an extreme and unusually severe frost of a few years since, as it is frequently seen of a considerable size — may, perhaps, be considered as in some degree acclimatized. Without being positive as to the fact, I may here, perhaps, state that it sometimes seemed to me that the foliage of the trees in England was thicker and more luxuriant than that of the United States. If this is so, whether it is owing to a moister and milder climate, greater fertility of soil, or other cause, until more certain of the fact, it is unnecessary here to consider. Of one other fact, to the advantage of England, I feel more confident; and that is a much greater exemption in that country from vermin and noxious insects destructive of vegetation than in the United States; at least, neither such, nor the effects of their ravages, are there noticed as it is so frequently in the last-named country. I intended to have said something, in this letter, about flowers; but have occupied so much of it with trees, that I have left myself no room for it. *Joseph S. Cabot.*

PARIS, FRANCE, NOV. 8, 1867.

Editor "American Journal of Horticulture."

I SEND herewith a photograph of a Concord grape-vine that was cut from my vineyard on the 7th of October last, and which was exhibited at the Fair of the St. Louis Agricultural and Mechanical Association, where it received the first prize as the "best sample from a vineyard."

My object in sending it to you is, that you may have it engraved for the Journal, that your readers may see how a grape-vine should look when the most natural mode of culture is adopted.

I am well aware that the readers of horticultural books and periodicals are accustomed to seeing pictures of grape-vines; but, in nine cases out of ten, they are ideal representations, instead of being drawn from Nature. Hence I send you a correct photograph of the original vine.

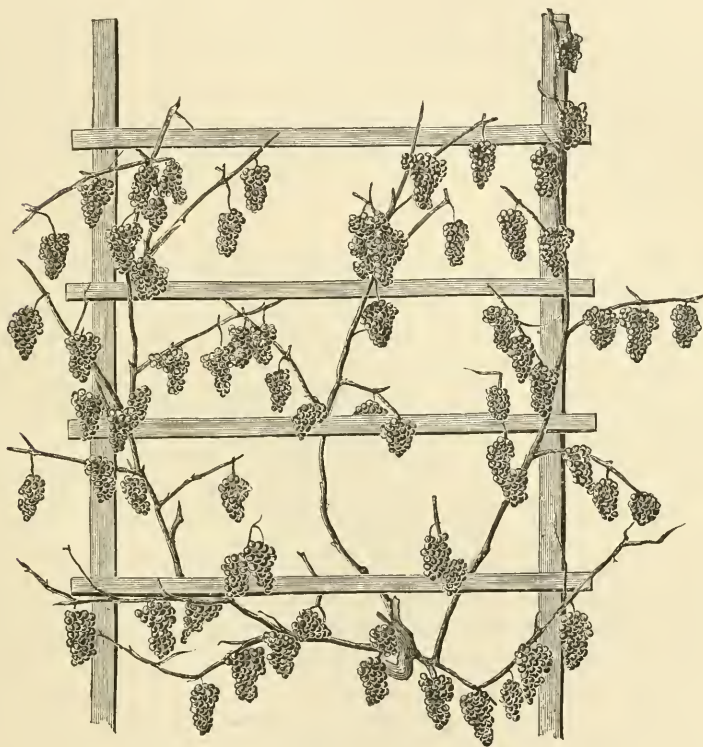
We have already a superabundance of literature supposed to be devoted to grape-culture and wine-making, while the principal portion of it tends to bewilder rather than to instruct.

I consider grape-growing as simple as corn-raising, and wine-making as easy as cider-making.

I once thought that grape-vines could be taught good manners, behave themselves, grow in a genteel manner, set their fruit, like huge "waterfalls," in the right place, and produce uniform canes on their extended arms, as we have been taught to believe by the theoretical, book-producing Solons of the past. But, alas! my vines would rebel; and, after five years of warfare with the knife, I entered into a compromise with them, and said, "If you will grow good wood each year for the next year's fruiting, just enough to cover the trellis, I will use

it, no matter in what form it may come, and I will assist you in having the new canes start from as near the ground as possible each year."

Grape-culture is undergoing a great and radical change. Once the ground must be trenched to the depth of three feet, vines to be planted on steep hill-sides ; and we thought expensive wine-cellars, of great depth, to be indispensable : whereas vine-planters are now planting on rich rolling lands, such as they would select for a good crop of corn, with only the additional preparation of subsoiling with a good subsoil-plough to the depth of twelve or fifteen inches.



Vine-planters have learned by experience the value of well-grown, healthy vines. Of these, the most desirable are strong, one-year-old vines, grown from cuttings, the principal roots being about ten inches below the surface at the lower end of the cuttings. A good vine should have at least two feet of well-ripened wood and roots, which can only be secured by growing it on at least two superficial feet of space.

My method of growing vines is to plant them in rows four feet apart, and

one foot in the row. If desired to do so, I will give the details of my method of producing vines from cuttings in some future number of the Journal. I have invariably succeeded in making nine-tenths of my cuttings grow; and have experimented this dry season with nearly two hundred thousand vines, and that, too, with marked success.

In reference to the manufacture of wine, permit me to say that I have seen a very fine article of wine made by simply pressing out the juice, putting it into casks, and then rolling them into a hole dug in the hill-side, and covering them up with rough boards. I do not cite this instance to encourage carelessness so much as to prevent unnecessary expense, care, and labor.

If there is any one thing that is more essential in successful grape-growing, it is the summer pinching of the fruit-bearing laterals. You will observe that all the wood has been left on the lower laterals in the photograph sent you; thus showing the first pinching at the bunch, then one leaf on the new lateral that starts each time, so that there will be three or four leaves at the end of each fruit-bearing lateral when the fruit is ripening. In brief, then, my motto is, never to do any thing in a vineyard without first knowing *why* you do it.

ST. LOUIS, MO.

J. W. Jordan.

EARTHING UP TREES IN WINTER.—For several years we have practised heaping up earth about dwarf apple and other trees, and especially about those that were exposed to the effects of standing water in winter. It is not best to plant fruit-trees where the water will so stand; but it often happens, that when the ground is frozen, and there comes a rain, the low places will fill up, and the water freeze before it can settle away. When this is the case, trees standing in such exposed positions will be liable to be injured, if not entirely girdled, by the ice that will form in a night or two. Stakes driven down about the tree will serve as a protection; but a simpler and cheaper way is to throw up the soil around them, in a cone-like form, as high as the water will be likely to reach.

TREES UNDER SNOW.—Many fine dwarf pear and other trees were nearly or quite ruined last winter, and, indeed, are every winter, when there are deep snows, for the want of a little attention. If the trees could be nicely covered, and so remain, it would be an advantage; for there can be no better protection from severe weather: but it is well known that snow soon begins to settle, and drags down the trees that may be covered by it. We have seen trees broken and crinkled down in every possible shape and way, so that they have been entirely ruined. Now, a little care bestowed upon them just after the snow falls will prevent such a result. Tread down or shovel away the snow, leaving no branches to be dragged down by it, and there will be no liability to damage.

A RAPID-GROWING TREE.—The silver-maple is one of the most rapid-growing trees that we know of in the North. We have just dug up some trees of this variety in an old nursery that are only twelve years old, and yet are a foot in diameter, though grown thickly in rows with many others. It is a good thing to plant where a quick growth is desired, and it is a pretty clean and good shade-tree.

CIDER AND VINEGAR.—The price of these articles has never been so high as it is this year. Good cider is now selling for thirty-five to forty cents per gallon; and cider-vinegar, which is very scarce, readily brings half a dollar a gallon. Perhaps it cannot be expected that either of these articles will be very low while apples sell from four to five dollars a barrel; but it would seem reasonable that those who are fortunate enough to have apples would make their poorest apples into cider, and send it forward to market, where it always commands a ready sale. It is true that cider is more highly esteemed than it has been for some years, and is sought for by persons of bilious habits, it being regarded as a healthful beverage for such.

The best cider is made from the russet or the crab-apple. There is a very great difference in the quality of that offered for sale, some barrels being worth double the price of others. We have known some wild apples to yield a cider hardly worth making, and not fit for drinking. It should be made from good, sound, ripe fruit, and then run through sand to remove all impurities; and after it has worked a little, if it is intended for drinking, it should be nicely bottled. We hope apples may be more plenty in years to come, so that cider may be made in sufficient quantities for vinegar, if not for drinking.

PROPAGATING CORREAS, ACACIAS, AND CYTISUS.—Correas and acacias are increased by cuttings; and the points of the shoots, when the wood becomes a little hardened at its base, should be taken,—about three inches of the moderately-vigorous shoots. The foliage should be removed from the cuttings for half their length from the bottom; and the base of each should be cut transversely below the lowest joint with a sharp knife. They should then be inserted in a pot half full of crocks, filled to within an inch of the rim with a compost of sandy peat two-thirds, and one-third sandy loam and silver sand, and then to the rim with silver sand. The cuttings should be inserted round the sides of the pot, and up to the leaves in the sand. Give a gentle watering, and place the pots in a house with a gentle heat, covering the cuttings with a bell-glass. A slight bottom-heat will facilitate rooting. Shade should be given from sun; and the atmosphere must be moist, the cuttings not being allowed to flag from the dryness of the soil; and the latter must not be made sour from constant watering. The cytisus may be increased from cuttings as above described. May and June are a good time to put them in.

BLACKBERRIES.—An intelligent farmer, and one who has been quite successful in the cultivation of this fruit, recently said to me, "It is no use to try to raise blackberries, unless you are willing to take the trouble to lay them down in winter." It is a fact, that the wood is often so injured during that season of the year as to cause almost an entire failure of the crop. The plants are not easily handled, and it is a good deal of work to lay them all down: still, if there is no other way, then, for the sake of the berries, every one should be willing to take that trouble. The plants are not generally trimmed severely enough, but are left to run wild and take their chance. This fruit requires good cultivation, and the best results cannot be attained without it.

LILIUM AURATUM CULTURE. — The culture of this plant is the same as that of *Lilium lancifolium*. Early in November, repot it, removing all the soil that comes away easily; but on no account remove or injure the fresh, healthy roots. If there are any offsets, remove them, and pot them off singly in four-and-a-half-inch pots; or three or more may be placed in a seven-inch pot. The drainage should be good. Half fill the pot with a compost of one half turfy loam from rotted turfs, and the remaining half with equal parts of sandy peat and leaf-mould or very old manure. Introduce the bulbs, spreading out the roots; and cover them and the bulbs to a little more than an inch above the crown. The old decayed stem should be cut down to the soil. One bulb should have a seven-inch pot; whilst three bulbs may be placed in a nine-inch, or seven or more may be placed in a twelve or thirteen inch pot. Strong bulbs should have more pot-room than weak. Give a good watering, and place the pots in a house or pit from which frost is just excluded. The soil should not be kept more than moist over the winter. When the shoots are growing, water should be given; and a light and airy situation in a cool house or pit should be afforded. The pot should be filled to the rim with the same kind of soil as was used for potting; the water should be liberal; and liquid manure may be given once a week. The frequent syringing overhead will also be of advantage. The plants cannot have too much air, nor be kept too near the glass: only in no case must they be allowed to touch it. After flowering, lessen the supply of water, and repot immediately the foliage turns yellow.

PIMELEA CULTURE. — The pimelea may be grown well in a compost of turfy, sandy peat two-thirds, and one-third sandy, turfy loam, with the addition of enough charcoal about the size of a pea, and silver sand, to amount to one-fourth of the whole. The peat and loam should be chopped, and made pretty fine, and the whole well mixed and incorporated. The plants should have a cool, airy frame or pit during the summer; and in winter a light, airy situation in a greenhouse from which frost is merely excluded. They should be cut back after flowering; and, when the young shoots are a few inches long, the plants should be carefully potted, removing the greater part of the old soil, but preserving the roots, and, in potting, providing good drainage, and keeping the neck or collar of the plant slightly raised in the centre of the pot. After potting, keep the plants rather close and shaded for a few days; afterwards give them plenty of air, and keep them near the glass; then water when necessary; but do not give excessive quantities at any time, and yet sufficient at every watering to show itself at the drainage. Careful watering is needed in winter, and plenty of air.

WINTERING CALADIUMS. — Caladiums should be wintered in a house with a minimum temperature of from sixty to sixty-five degrees; and the soil should be kept dry, but not dust-dry, as that is apt to cause the roots to rot upon their coming in contact with moisture. If possible, place the pots on a moist bottom; they will absorb enough moisture: but, failing this, sprinkle two or three times a week with water, so as to make the surface of the soil and the pots moist.

HONEY-DEW. — The following, from "The Cottage Gardener's Dictionary," explains the gummy exudations on the foliage of many parlor-plants: "Heat, attended by dryness of the soil, as during the drought of summer, is very liable to produce an unnatural exudation. This is especially noticeable upon the leaves of some plants, and is popularly known as honey-dew. It is somewhat analogous to that outburst of blood, which, in such seasons, is apt to occur to men; and arises from the increased action of the secretory and circulatory system, to which it affords relief. There is this great and essential difference, — that, in the case of plants, the extravasation is upon the surface of the leaves; and in proportion, consequently, to the abundance of the extruded sap, are their respiration and digestion impaired. The various successful applications of liquids to plants, in order to prevent the occurrence of the honey-dew and similar diseases, would seem to indicate that a morbid state of the sap is the chief cause of the honey-dew; for otherwise it would be difficult to explain the reason why the use of a solution of common salt in water, applied to the soil in which a plant is growing, can prevent a disease caused by insects. But if we admit that the irregular action of the sap is the cause of the disorder, then we can understand that a portion of salt introduced in the juices of the plant would naturally have an influence in correcting any morbid tendency; either preventing the too rapid secretion of sap, stimulating it in promoting its regular formation, or preserving its fluidity: and that, by such a treatment, the honey-dew may be entirely prevented, we have often witnessed when experimentalizing with totally different objects. Thus we have seen plants of various kinds, which have been treated with a weak solution of common salt and water, totally escape the honey-dew, where trees of the same kind, growing in the same plot of ground not so treated, have been materially injured by its ravages."

HEADING IN PEACH-TREES. — This tree is such a rapid grower, that, if left to itself, it will soon become straggling and awkward; and it should be headed in and kept low, and it will thus become more symmetrical, as well as more convenient for the fruit-gatherer. This process, we believe, has also the effect to prolong the life of the tree. It often happens that the extreme ends of the peach-twigs do not ripen, and are winter-killed, and would better be off than on the tree. They are, by this mode of trimming, kept nearer the ground, exposing both the tree and fruit less to injury by storms. Some perform the operation in spring, others in autumn. We have practised both ways with good results, and now suit our own convenience as to time, so that it be after the leaves have dropped, and before the starting of the trees in spring.

CELERY. — This may be kept in good condition through the winter in a cool, dry cellar, by having it set out in earth. When a small quantity only is wanted, take a box, and stand up the celery in it, placing a little earth about the roots. The farmers who raise quantities of it often keep it in their old hotbeds, standing it up, and protecting it from frost. There is no vegetable more relished than this; and every person who has a garden should raise enough for his own use, if no more.

FOR BOUQUET-MAKERS. — The plant called galium is very well known for its use in adding effect to bouquets ; but there is another plant, much better for the purpose, which is known to but few. This is the panicked gypsophila, a hardly perennial of easy cultivation, but difficult to propagate, because in this climate it rarely bears seed, and because the root is of a nature unfavorable to division. It blossoms in the open air in June and July, at which time the whole plant is covered with a myriad of minute, pure white flowers ; so that it seems, at a little distance, as if wrapped in a translucent cloud. But, delicate as are its innumerable flowers and stems, they have strength enough to bear an ordinary storm of wind and rain without the least injury. Examined closely, the blossoms are of great regularity and beauty ; and collectively, when tied up with other larger and more gaudy flowers, they produce an effect of delicacy and grace quite unequalled in its way. The plant grows freely in common garden-soil, and might, perhaps, be forced in the greenhouse ; but we have never tried it.

F. P.

WHITE LILACS FOR WINTER. — The white lilacs of the Paris flower-markets have long been famous, not only on account of their delicacy, but also the profusion in which they are produced. The following remarks from a correspondent in Paris will explain how they are obtained : —

“ If there be one flower more than another indispensable to the Paris flower-market in winter and early spring, it is the white blossoms of the lilac. Large bunches of it may be seen in every flower-shop as early as the month of January, and it is always associated with the early violet and the forced rose. This lilac is the common kind, and yet it is produced perfectly white. The French florists have tried the white variety ; but they do not like it : it pushes weakly, and then does not look of so pure a color as the ordinary kind, which, in its normal state, bears lilac-colored flowers. They force this common lilac in great quantities in pots, and to a greater extent planted out, as close as the plants can be stood, in pits, for the purpose of furnishing flowers for cutting.

“ The plants that are intended for forcing are cut round with a spade in September, to induce them to form flower-buds freely ; and they commence to force early in the autumn. They, at first, judiciously introduce them to a cool house : but, after a little while, they give them plenty of heat ; and, when once they are fairly started, they get from 25° to nearly 40° C. (say from 77° to 100° Fahrenheit.) At the same time, abundant humidity is supplied, both at the root and by means of the syringe ; but the chief point is, that, from the day the plants are put under glass, they are not allowed to receive a gleam of light, the glass being completely covered with the *paillassons*, which are the neat straw-mats so much used here for covering frames, pits, and all sorts of garden structures, in winter. Thus the lilac is made to push freely, and its white blooms are gathered before the leaves have had time to show themselves. The great degree of heat, — a degree which we never think of giving to any thing of the kind in England, — and the total shade to which they are subjected, effect the bleaching.

“ The French commence to cut white lilacs about the end of October, and do so till lilacs bloom in the open ground.” — *W. R., in Florist.*

MONSTERA DELICIOSA. — The fruit of this plant has been suggested as a choice occasional addition to the dessert ; but the presence in the pulp of minute prickly crystals, or raphides, has been held to detract very much from its merits as an edible fruit. If, however, the fruit is thoroughly ripened on the plant, the delicious juice may be sucked from the pulp with little, if any, of the unpleasant pricking sensation caused by eating the substance of the fruit itself in the earlier stages of ripeness ; and the flavor is much richer when the fruit is thus thoroughly matured. The supply of an occasional fruit of *Monstera* is no chimeræ. "We have ourselves," writes the editor of "The Gardener's Chronicle," "from a plant only some three or four years old, and confined in a half-bushel pot, gathered half a dozen fruits during the present season ; and the same plant has now five other spadices just passing through the flowering stage." To secure this thorough ripening on the plant, it is necessary to support the fruits with a tie to the adjoining leaf-stalk ; their weight being sufficient, if they are not thus supported, to break them over at a much earlier stage, just at the top of the stalk. They take about a year, more or less, to swell and ripen.

This plant is a native of Mexico, and is of easy culture in a stove.

The more common species is *M. Adansonii*, formerly called *Dracontium pertusum*, remarkable for its singular leaves, which appear as if holes had been cut through them.

The fruit of *M. deliciosa* has a luscious pine-apple flavor.

THE FLEMISH BEAUTY PEAR. — Few pears have so pleased some, and disappointed others, as this. In some seasons, and in some soils, it flourishes well, producing large and handsome specimens of fruit that is of the first quality ; while in other seasons or soils the very reverse is true, the fruit being small and tasteless, even if it does not crack so as to be worthless. We know that there were bushels of this fruit during the past season that were not regarded as worth gathering. In many cases, trees bearing this variety have been grafted over to some more reliable sort. In some instances, in the same soil, it has done much better on the quince than on the pear. It can no longer be recommended for general cultivation, on account of its variable character.

PROPAGATING VIOLA CORNUTA. — This plant strikes very freely from the side-shoots, or runners, slipped off, either with or without roots, and potted in small pots filled with light soil, and placed in a cold frame. They should then be kept close and shaded for ten days or a fortnight ; the soil being maintained in a moist condition, and water being applied overhead in the morning through a fine-rosed watering-pot. When the young plants are growing freely, harden them off, and plant out where they are to remain. It is easily increased by division and seeds.

GLADIOLI ADOLPHE BRONGNIART AND NEWTON. — The former is supposed to be the finest gladiolus which has yet been raised. The color is deep rosy cherry, with white lines.

The latter is deep pink dashed with cherry, and white throat.

ARRANGING CUT FLOWERS. — A writer in "The Gardener's Chronicle" observes, that, of all the mistakes that are made in arranging flowers, the commonest is that of putting too many into a vase ; and next to that is the putting too great a variety of colors into one bouquet. Every flower in a group should be clearly distinguishable and determinable, without pulling the nosegay to pieces. The calyx of a clove-pink should never be hidden by being plunged into the head of white phlox, however well the two colors may look together. Sweet-pease never look so well in the hand as they do on the plant, because they cannot be carried without crowding them ; but put them lightly into a vase with an equal number of pieces of mignonette, or rather ornament a vase half full of mignonette with a few blooms of sweet-pease, and you get a charming effect, because you follow the natural arrangement by avoiding crowding of the blooms, and putting them with the green foliage, which they want to set them off. Few people are aware, until they try it, how exceedingly easy it is to spoil such a pleasing combination as this : a piece of calceolaria, scarlet pelargonium, or blue salvia, would ruin it effectually. Such decided colors as these require to be grouped in another vase, and should not even be placed on the same table with the sweet-pease : they also require a much larger preponderance of foliage to set them off to advantage than is wanted by flowers of more delicate colors.

PROPAGATING GOLDEN BALM. — This plant strikes from cuttings as freely as, if not more so than, the white-variegated variety, but is not so constant in its variegation. Cuttings put in sand in a cold frame, shaded, and kept close, will soon root, and, being protected over the winter in a cool house or frame, will furnish a quantity of cuttings in spring. These will strike freely in a gentle heat. You may take up two or three old plants in autumn, wintering them in a cold frame ; and, by placing them in heat in spring, you will be able to obtain a number of cuttings. These, if put in in March or the early part of April in heat, will be fit to plant out at the end of May.

AZALEA CUTTINGS. — The cuttings should be taken from the shoots of the current year, selecting those which are moderately strong. When the wood becomes a little hard, or what is known as half-ripe, the points of the shoots should be taken off at a sufficient length for cuttings. Cut below the lowest joint which they may have ; remove the leaves from the lower part of the cutting, and for half its length ; then insert the cuttings up to the leaves in silver sand. The pots may be plunged in a hot-bed of from 70° to 75°, with a shaded and close atmosphere.



THE Editors of "The American Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulturists.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

NATHAN D. T., St. Louis. — *Camassia esculenta*, *Scilla esculenta*, and *Scilla Fraseri* (the latter being the most correct name), are one and the same plant, — the quamash of the Indians of the North-west. The bulbs are small, hard, white, with a black skin; the leaves somewhat resemble a hyacinth, but are narrow; the flowers are white or bluish, from twelve to fifteen on a stalk.

The bulb is hardy, and will do well in the garden if planted in rich loam.

SELMA. — In my garden are several very thrifty pear-trees, of good size, that have been set more than ten years, and yet have not given a single specimen of fruit. I have got almost out of patience, and want to know how I can make them bear something?—Some varieties are much longer coming into bearing than others: the Urbaniste is one of this class; the Dix is another, even more tardy in fruiting: while on the other side is the Bartlett, that bears too young and too much. If your trees have room to spread, let them grow: they will begin to bear when they get ready, and be able, on account of their large size, to give good crops. If you really need the fruit, or find they have already taken as much room as you can spare for them, then check their growth, and thus cause them to make fruit-buds for the following year. Some prefer to accomplish this result by root-pruning, and thus check the luxuriance of the tree. If this is resorted to, let it be done with some caution, and in the fall or early spring, before the trees have started. After a trench has been dug far enough from the tree to leave what roots will be needed to support it, then fill in some manure, and cover up again; and, if the operation be properly performed, good results will follow. Another way is to bend down the branches, and keep them so bent for a month or two, that the growth of the tree may be checked. Pinching in the new wood all over the tree has a similar effect; induces the formation of fruit-buds; and, the following season, you may expect a crop. When once the trees begin to bear, they will continue fruitful, as a general thing. We have seen dwarf pear-trees treated very much like a grape-vine, trimmed back to mere spurs, and so pinched in during the whole growing season, that the tree had little else to do than to mature its fruit, and form buds for the next year's crop.

MRS. J. A. P., Darcyville, Haywood County, Tenn. — Beard's patent glass houses are not yet for sale in this country, and we are unable to furnish items of cost. We have written to England for information, and shall be able to furnish full answers to all inquiries. If the statements of those well qualified to judge are to be relied upon, the introduction of these houses will work a revolution in greenhouse architecture.

What do you mean by "portable greenhouses"? In England, they have greenhouses which can be erected in such a manner as not to become fixtures, and which are moved away by the tenant at the expiration of the tenancy. They are not to be procured in this country; but we can obtain information if you desire it. It would, however, be a very expensive thing to import a greenhouse at the present price of exchange and the high duties; and, when obtained, it would be unsuitable for our climate, as the pitch of the roof would not be the best for our sun.

IDEM. — You can procure slips or cuttings from any greenhouse. Write for what you wish, and you can receive them safely by mail, done up in oiled silk. Young plants can also be easily sent in this way to any part of the country. Under the present postal law, bulbs, plants, cuttings, seeds, grafts, are carried by mail for two cents for each four ounces, or less quantity. The contents of the package, whether seeds, bulbs, *et cætera*, should be marked on the outside.

J. C., Springfield, Mass. — Had I better lay down my grapes in winter? I have covered them for several years, as I did my raspberries, but have not been able to see any good results.

We should advise our friend to lay down the most tender varieties, such as the Allen's Hybrid, Adirondac, Rebecca, and others that are equally tender; but leave up the Concord, and others that are equally hardy. Sometimes we think there may be great advantage derived from thus covering in winter; while, in some seasons, no good, and possibly positive harm, results from such a course.

WARDIAN CASE, Newburyport, Mass. — There is no American work on ferns; but many published in England include most of our species.

One of the best is Lowe's "Ferns," eight volumes octavo, with many hundred colored plates, and one volume supplement, "New Ferns." Hooker has published some elegant works on ferns, which can be imported. John Smith, ex-curator of the Royal Botanic Gardens, Kew, in 1866 published a volume of about four hundred pages, called "Ferns, British and Foreign," which is a very useful handbook. The fronds you enclose are, — 1. *Pteris Cretica albo lineata*. 2. *Asplenium ebeneum*. 3. *Platyserium alaicorne*. 4. *Gymnogramma Peruviana*.

ROBERT BELL, Baltimore. — We think it most likely that all of Jackman's new clematis would prove hardy with you; or, at the most, only require to be covered with earth in the winter. Mr. Jackman's plan of cultivation is (as we learn from a recent English paper) to cut the plant down to the ground in early spring, which causes the production of vigorous shoots, which are covered with bloom in the latter months of summer. The two best known of Mr. Jackman's seedlings are *C. rubro violacea* and *Jackmani*. Most of these seedlings flower profusely on the new wood, and thus require a different mode of culture from *Clematis azurea grandiflora*, *Sophia*, *Helene*, and *montana*.

ADAM'S NEEDLE, Burlington, Vt. — The only yucca which is perfectly hardy in New England is *Y. filamentosa*, — the one you have, as we judge from the leaf sent. There are many others, some very beautiful plants, which may prove hardy, and on which we shall report after another winter's trial. There is a variegated variety of *Y. filamentosa*, which is very beautiful, but somewhat rare.

A SUBSCRIBER, Boston. — The name "carrion-flower" is applied to various species of *Stapelia*; but the plant you describe is *Smilax herbacea*, to which this name is given from the fetid odor of the flowers. The plant itself is very pretty, as are all of the *Smilax* family; but the odor, when in bloom, is disgusting.

A. M., Worcester. — Your seedling camellia is very good, but not sufficiently distinct from other whites to merit special notice.

DIX, Ill. — Some years ago, I purchased a lot of pear-trees at the East, and among them were half a dozen of the Dix. These trees were all treated alike, and have made great growth; and most of them have now come into bearing. The Dix Pear has never given any fruit, but grows well year after year. My patience is nearly exhausted. Please tell me what I shall do with it? — Wait a little longer. If you have plenty of fruit from the other trees, you can well afford to wait for the Dix, which is well known to be one of the most tardy bearers of all our varieties. If it does not crack with you (and we presume it does not), you will feel yourself amply repaid for waiting when you enjoy, as you will by and by, its rich, luscious fruit. If it is a long time coming into bearing, you may reasonably expect it will live and flourish for many years.

ONE WHO VALUES THE JOURNAL, N.Y. — It is very easy to have violets all winter. The plants must be healthy, and well established in the autumn, and must be kept from frost all winter. "Flowers for the Parlor and Garden" will tell you all about it. We also propose a series of articles in the Journal upon forcing flowers in frames for winter-bloom.

BULB, Dorchester, Mass. — The bulb you bought for *Iris pavonia* is usually known as *Vieusseuxia pavonia*, or *glaucoptis*; but the common name is Peacock Iris. The flower is very beautiful; white and vivid blue. You were right in not planting it out of doors: it is not hardy. In the greenhouse, it blooms about March. It will do well in the window as a parlor-plant.

QUINTIN, Richmond, Va. — A parasite is a plant growing upon some other plant, and deriving nourishment from its juices. An epiphyte is a plant growing upon another, but only using it for support, deriving no food from its juices.

A large proportion of mosses and orchids are epiphytes.

M. B. F., Buffalo, N.Y. — Mr. Rand's book on greenhouse-plants will not appear at present. The labor of writing such a volume is very great; and, as it is the author's endeavor to make it as perfect and comprehensive as possible, its publication will be somewhat delayed.

QUERIST, Troy, N.Y. — Gloire de Dijon is a tea-rose, and Souvenir de la Malmaison is a Bourbon. You will find every possible information on the subject in Parkman's "Book of Roses," published at this office.

W. C. A., Madison, Wis. — Is it true that Rogers's No. 22 and Salem are one and the same thing? — We have never fruited the Salem; but we are assured by one of the very best judges, who is perfectly familiar with all the Rogers numbers, that the 22 and Salem are identical.

J. B. M., Dayton. — The article on rhododendrons, in the present number, will answer all your questions. "American plants," so called, all do well under the same treatment. Shall be glad to have your experience.

W. N. B., Salem, Mass. — I find the Stevens's Genesee Pear put down in the books as first-rate, while with me it is nearly worthless. Can you give me any explanation of the mystery? — Downing, in his fruit-book, says, "This admirable pear, combining in some degree the excellence of the Doyenné and Bergamotte, is reputed to be a seedling," *et cætera*. Again: "Flesh white, half buttery, with a rich aromatic flavor, somewhat like that of Gansel's Bergamotte." We have never been able here in Massachusetts to get it fit to eat. It is never even half melting, while it has the very bad habit of rotting at the core. Of some thirty or forty trees we set out in our orchard of this variety, not one remains. We have grafted them all to some better kind. There are, doubtless, parts of the country where it does much better.

PORTLAND. — The Catillac was strongly recommended to me as the best baking-pear on the list, and I set out three trees. Of these, two have been winter-killed, as I believe. Is it tender? What pear can I set out to take its place?

It is inclined to be tender; its wood is soft and spongy, and does not seem to withstand the winter well. It is a splendid stewing and baking pear; none better that we have ever seen. The Pound, or Uvedale's St. Germain, is a very fine, large pear, and much esteemed for cooking in various ways. It often grows to a very large size.

MARKET-GARDENER. — Several years ago, I saw in the market some fine cabbages called the Drumhead Savoy: can you give me any information about this variety? — Yes: we raised it for several years. It is claimed as a cross between the Green-globe Savoy and the Drumhead, and resembles the former somewhat in the curl of the leaf and quality, and the latter in form and size. It is a good cabbage, but not equal in quality to the smaller and finer kinds of the Savoy. A good market sort.

S. S., Newton, Mass. — Is there any benefit to be derived from covering strawberry-beds in winter? — We think so. It depends very much on what kind of a winter it is. If there should be but little snow, and a good deal of freezing and thawing, then it would be a decided advantage to cover; but if you could be sure that there would be snow that would keep them covered all winter, then there would be no need of artificial covering.

N. E. G. — How shall I manure my pear-orchard? — In the fall, either by putting the manure around the tree in a heap, or by spreading the same late over the ground, and ploughing it in. It is best to avoid putting any unfermented manures in direct contact with the roots of trees; but spread or pile it on the surface, and let the rains wash its virtues down about the roots.

YOUNG FLORIST, Pittsburg, Penn. — You will find all the information you need about cyclamen in our last volume. The flower is a very beautiful one, and well worth any care and attention.

R. B. B., Elkhorn, Ill. — The cause of the falling of the buds of your camellias was want of moisture in the air. Some varieties seldom or never perfect their flowers in a parlor; and many drop the buds in the greenhouse if the atmosphere is too dry. It is a good plan to supply moisture by small sponges placed on the branches, below the buds, which are thus kept in good condition, as the sponges can be wet as often as they dry by evaporation. There is a possibility that your plant fails to bloom from want of fresh soil, or from being diseased. We cannot speak certainly from the meagre information you give.

X., Suffield, Conn. — As you suppose, the fruits are medlars. They are of little if any value, and are not ripe till they are rotten. The bush or tree is rather ornamental in foliage, and very showy in flower. Every spring, those in our garden are masses of white bloom: the fruit we never gather. Treat the plants the same as you would a quince. There are several kinds to be procured at any large nursery.

IDEM. — Your daphne probably needs repotting. Take in from the pot; remove carefully all sour, old soil, thus reducing the ball, but being careful not to injure the roots; then repot in fresh sandy loam. It should bloom about Christmas, and will then begin to grow. Prune after blooming. Grow the wood well; for on a strong growth depends your bloom for next year.

IDEM. — *Diseased Leaf*. — The leaf you send appears to have little on it. A few small specks seem to indicate mildew, caused by a close, damp atmosphere. Syringing increases rather than cures mildew. Dust the plants with fine sulphur, and give a dryer atmosphere.

M. B. A., Chicago. — Ask for any information you need, and we will do our best to supply it. We can hardly be expected to know each particular want; though we do our best to meet the wishes of all.

A. C., Providence, R.I. — Will a cranberry-plantation be greatly benefited by flowing in the winter? — Yes, we think it will, and that it should be done whenever it can be without too much expense. It is better to have it so arranged that you can flow it any time, — winter, spring, or summer.

C. M. B., Newton. — *Berberis Darwini* is precariously hardy; often winter-killed. *Skimmia Japonica* will stand the winter, but is often injured. Massachusetts is probably the northern limit of the culture of these plants.

A. S. C., Templeton, Mass. — Manure the rhubarb heavily this fall. You cannot make the ground too rich. In the spring, fork in the manure round the plants.

Top-dress your asparagus-beds now, and salt now, or in the spring, — any time, at either season, when the ground is not frozen.

A. B., Worcester, Mass — Taking into consideration hardiness, size, beauty of form and color, flavor, productiveness, and length of time during which it is in eating, what is the best strawberry to raise for home-use alone? What kind of soil is best suited to it? Does it need high culture? Is one kind of dressing better than another? if so, what is the best? Should it be kept in hills? or should it be allowed to run? If in hills, at what distance should they be from each other? or if in rows, at what distance should the plants be set from each other in the row? and how far should the rows be apart? Do they require covering in winter? if so, when should the covering be applied? when removed? and what is the best material to use as a covering? Is it necessary to set new plants every year to secure the best crop possible? At what season of the year should the plants be set to stand the best chance of success? In setting them out, shall I be likely to get better results if I dig a hole for each plant, make a cone in the centre, and spread the roots carefully around it before filling in the earth about them, as I have somewhere, at some time, seen advised in print?

Hovey's Seedling is the best for your section, and best answers your requirements. A good, rich, and tolerably moist soil is best adapted to it. It needs high culture to realize the very best results. There is a difference in dressing, of course. The best we have found is old, well-rotted horse-manure. It should not be grown in hills: it does not do well when so grown. It should be allowed to run. Plant the rows four feet apart, and the plants in the row three or four inches apart. Some plant a double row, and put the plants six inches apart each way, breaking joints. We have seen the Hovey's Seedling planted in rows eight feet apart, and the plants four inches apart; and they covered all the land at the end of the season. The land was manured at the rate of four hundred dollars' worth to the acre. They ordinarily do much better if covered in winter. We have known beds left without covering to do well when they were covered with snow most of the winter. It should be applied about the 1st of December, or before the weather becomes very cold; and removed from the 1st to the 10th of April, after the ground ceases to freeze. The best thing we have ever found is coarse, strawy horse-manure. Care should be used not to cover them too deeply. When strawberries are grown in beds, and allowed to run, we think it is very much better to plough them up after one year's fruiting. The best time to set out plants is the very last of April, or first of May. At this season of the year, all the plants live, and the frequent showers of spring help them to become quickly established. A separate hole should be dug for each plant with the fingers or with a trowel; but we should not advise any person to take the trouble to form a cone or mound on which to set the plant: we doubt if it will pay to take so much trouble. We like to have the roots spread out as nearly as possible as they were before being taken up. Some careless planters simply make a hole, and force in the roots all in a bunch, and then wonder that it takes so long for the plants to get a start. We wish our friend the best success; and, if he wants to plant another variety, put in a few of the Brighton Pine. If a variety is wanted for market-purposes merely, then plant the Wilson; for there is not probably a strawberry in the whole list that will pay better than this.

B., Portland, Me. — How can I improve my tomatoes so that I may be able to get them earlier than I do now? — By saving the seed of the very earliest fruit each year: much can be accomplished in this way. It is said that the Keyes Prolific ripens one or two specimens to a plant several days before any other variety; and any person, by selecting these very early tomatoes, will find in three or four years that he has an improved variety. Many vegetables may be greatly improved in this way.

HARTFORD, Conn. — For several years, my cranberries have not kept well in winter; and I wish to know if there is a better way of keeping them than the one I have practised, — spreading them in a cool, dry place? — A cool and dry temperature is the best for keeping fruit of any kind; but there is danger that it may be too damp or too dry at times. We have kept our cranberries in the house-cellar in water, and have had no trouble. They are as fresh-looking in the spring as when gathered in autumn. The water should be changed once in three or four weeks. Cranberries are shipped in tight casks with water.

PROVINCETOWN. — Our lands on the Cape are composed of sand, that blows about with the wind, as you may know. What is the best way to form a proper soil for a garden where vegetables and the small fruits can be raised successfully? — It is a rather hard question to answer. If you can get clay from the beach or elsewhere, it will do well; marsh-mud will help; fresh meadow-muck is good. All these, mixed with the sand, would form a good soil, where vegetables would thrive. If you can get some fresh loam without too great expense, it would be good to mix in.

E. M. G., New Jersey. — Shall I manure my vineyard? and, if so, what dressing shall I use? The vines are three years old, and two years set. — If the land was properly prepared when the vines were set, they should not be manured now. If not, then apply old well-rotted horse-manure in limited quantities, bone-dust, or ashes; always avoiding coarse, unfermented manures. The dressing should be applied in autumn or early spring. We have had the best success with grapes on the poorest land, — less mildew and rot, and earlier fruit.

INQUIRER, Thetford, Vt. — Has the Early Goodrich Potato proved to be good? Would you advise me to plant it? — It has proved to be hardy, resisting the rot where many other varieties failed. It grows to a good size, and is called a very good eating potato; though last season it did not prove equal to our expectations. You cannot probably do better than to plant it, if you can get the seed.

S. K., Sherborn, Mass. — The roots in my cellar begin to throw out leaves soon after they are harvested. What is the cause? and how shall it be prevented? — Your cellar is too warm. Possibly you put too many of them in a heap, and they heat some: if so, they will soon decay. Keep them as cool as possible without freezing.



OLD AND NEW HOMES.

CHAPTER V.

Succession of Crops. — Blackberries. — The Agency-system. — Advantages of Position. — Peaches. — Melons. — Tomatoes and Pickles. — Canning Fruit. — Farms in the South. — Settling Accounts. — Home Improvement. — Our Neighbors' Policy. — Comparisons.

By the 20th of July, our pease had been gathered, and our early potatoes dug ; and their places were at once filled by cucumbers for pickles : for the season here enables us to grow two and three crops the same year. At this time, also, we were gathering daily from our tomatoes, sweet-corn, squashes, and cucumbers, with now and then an early egg-plant. Our melons looked well, and the watermelons were already as large as a child's head. The squash-bugs had made their appearance, as usual : but a prompt dressing of plaster of Paris had put an end to their depredations ; and the drought, which had somewhat shortened our raspberry-crop, had been just the thing for them. Our acre of Lawton blackberries was ripening nicely ; and again the pickers found employment day by day, while we were busy

in arranging the fruit for market. The berries were very large and sweet ; and several times a week our chests were shipped to the New-York agent, who had given entire satisfaction by his prompt attention and punctual returns. The empty chests came back safely by the returning freight-trains, and were delivered at our station in good season for a subsequent picking. Indeed, this business of transporting fruit to market has become so systematized, that an agent on the railroad finds enough employment in attending to the taking-up of the produce on one train, and delivering the returned fruit-chests and truck-baskets on another. As the number thus transported is so immense, some, of course, may be lost, or never returned to the owner ; but these occurrences are rare.

We now understood why New Jersey was said to be so desirable a farming field, and why its profits were so large ; for its markets were the two great cities at either end of the line ; while the supply, great as it was, and increasing yearly, could never keep pace with the demands of those vast populations. These things were altogether different from other commodities, such as manufactured articles, which, however universal in their popularity, are not consumed and renewed daily. The public appetite for provisions was never satisfied ; or, if satiated one day, it needed as much more the next. No matter how high the price, there were always hosts of purchasers ready to take all that was offered ; and, if these middle-men made their profits as well as the farmers, they probably deserved them.

This agency-system was a great convenience to the working-farmer, who must, of necessity, be present on the farm at the busy season of ingathering, and could not well spare any of his hands to superintend the selling of his crops. In the hurry of getting them early to market, a day was of more value to him than the trifling commission charged by the agents. They were, in fact, necessary to each other's success ; and though the charge to each farmer was apparently small, yet, in the aggregate, the profits well repaid these middle-men, and constituted a splendid business. I have heard of one or two who cleared their thousands in a single season from the peaches alone. Of course, this sounds like a large sum ; but many farmers will prefer to sell their entire harvest for a moderate price in advance, rather than take the numerous risks attending the ripening, gathering, and getting to market, of a rather precarious crop like this. If the

agent's profits are thus large, it is plain that the proprietor of the orchard makes money in corresponding proportion.

As I have said, our blackberry-field yielded a very respectable product ; but our peaches, for various reasons, were not so promising. The ravages of the borer had made a serious impression upon the trees, which told upon this season's harvest. By another year, we trusted that the effect of our precautions in eradicating these enemies would become apparent in an increased quantity of fruit. But, if our peaches were of inferior quality, the price obtained was quite large ; for, owing to one or two late frosts, many larger orchards around us had produced only half-crops. This, of course, had a tendency to enhance the value of that which remained ; and so ours brought us as much, perhaps, as if the yield had been above the average. Every thing rises in value in proportion to its scarcity, as every merchant and farmer can tell.

It was now the first of September, and our watermelons and citrons were doing finely. They ripened splendidly in the hot sun ; and we shipped many a wagon-load to market, besides indulging freely ourselves. Then this was the season for canning and pickling. There were several large establishments in Burlington and in the neighborhood which absorbed all the tomatoes, cucumbers, and peppers that we could produce. It was really wonderful to look at our tomato-vines, and see the abundance of gorgeous-looking fruit which ripened so rapidly. On these things we were saved all expense of commission for selling, since our own wagon could deliver them directly at the consumers' doors. So it was with our peaches ; for these huge canning-houses were ready to take all that we offered, at fair market-prices. They had wisely located themselves in the very heart of the fruit-growing region, where supplies were easily obtainable. The great cities would be the ultimate market for distribution, and these canned fruits were as salable as the fresh ones. My mother made sure of a good supply both of peaches and tomatoes for our own use in winter ; putting them up in ordinary glass-jars, and covering the tops with pieces of strong muslin, on which had been spread a thick coat of cement, made by melting together one ounce of mutton-tallow and one pound of rosin. We prepared this in an old iron pot ; and, when once made, it lasted the whole season : we had only to set the pot on the fire until it was melted, and then it was

again ready for use. Three pecks of peaches (an ordinary truck-basket) required only three pounds of sugar ; and we put them into the jars while boiling hot, being careful to temper the glass gradually by letting a little of the hot sirup pass well around the sides before filling up with the fruit. The peaches were not cooked more than was sufficient to heat them, and, unless they were very juicy, would require the addition of a little water, as there must always be enough sirup to cover them. The jars were filled up to the brim ; and when the muslin covers were tied firmly over the top, and coated with the cement, they were effectually sealed from the air. As for the tomatoes, they required nothing to season them, only a thorough stewing for half an hour, and were sealed up in the same way : the seasoning could be done at the time of using. Many of our acquaintances used tin cans in preference to jars ; but ours were quite as well flavored, and kept admirably, whilst we were saved the needless expense of purchasing the cans.

The former owner of our snug little farm had gone South, expecting to make his fortune in one or two seasons by raising vegetables and fruit for the Northern markets. Knowing well, that, the earlier these things were offered, the higher would be the price obtained, he had conceived a plan for taking up some of the worn-out land in Virginia, and working it up to the proper *status* for the production of these luxuries. Full of his scheme, he had secured a farm of a hundred acres near Norfolk, and was working it vigorously ; bringing all his former experience to bear upon the soil, whose strength had long ago been exhausted by repeated tobacco-crops. The land itself had cost him very little ; but, in order to bring it up to the proper state, a large sum must be expended for fertilizers ; and even then it would take an amount of labor such as he little imagined beforehand. Yet this fever for going South has become quite prevalent among the old Jerseymen since the war ended ; and I doubt not, that after patiently toiling for several years, and expending enough capital in enriching the land, these enterprising people will reap rich returns. All their valuable experience at home will avail them greatly ; and, in the end, their bank-account may be larger than our own. For my part, however, I think it preferable to take a plantation that is ready to your hand, with fruit planted, and land in order ; and if it will feed and clothe us all, with a moderate surplus to be

invested every year, we should certainly be contented. But "many men have many minds:" and, if our friend who preceded us here had thought as we do, of course we should not have come into possession of our present location; in which case, I should not have been able to tell the same story.

When the season of fruit-gathering had fairly closed, and my father came to settle his accounts, his receipts were ascertained to be very respectable, considering our general inexperience: so, remembering his promise to expend a little in improving the old house, he sent for the carpenter, and we stated our plans. A pretty piazza on the front side, with green blinds to the windows, would not cost much; but how greatly it would beautify our home! Then there were a few repairs indoors, but nothing extravagant; the estimate of all being about two hundred dollars, including a good coat of paint on all the new wood-work. The order was given, therefore; and in a few weeks we had the satisfaction of seeing our house transformed into a pretty-looking cottage, far more to our taste than was the rough-looking domicile which had first met our expectant gaze.

"In the spring," said my father, "we will have a new fence and gate before the entrance, and a trellis for the grapes." In fact, he was so well pleased with the looks of things, that he was quite in the spirit of home improvement, which we were not backward in encouraging.

Perhaps some of our neighbors would have advised our waiting for these things a little longer, or even doing without them altogether, preferring to add a little more to the heap of savings. Their own shabby-looking houses, brown and weather-beaten, with neither shade-trees nor shutters, had remained in all their pristine ugliness for many years. They were contented to live thus, and would have counted it lost time and money to expend even a coat of whitewash upon any of their buildings merely to improve their looks. Different education and associations had caused us to decide otherwise; and entire contentment in a shabby, unpainted dwelling, without shade or flowers to comfort or adorn, would have been quite impossible in our case.

To step within doors afforded a continued comparison. In our neighbor's house, the front sitting-room was a stiff, bare-looking apartment, with coarse, gaudy paper on the walls; the table set back against the side of the room, with painted wooden chairs to keep it company. One or two books

that were never used were piled in order, while a pair of tawdry vases ornamented the ends of the mantle-shelf. A cheap, gay carpet covered the floor; and a painted window-shade, which must always be down in order to exclude the sun, completed the picture. This was the "company" room, into which the family, when alone, rarely entered, except to sweep or dust it. In summer, if opened often, the flies would enter; and in winter it was considered unnecessary to keep fire in it: so the kitchen was made the general living-room for all day-purposes the year round. They pursued the study of the practical and profitable, as they best understood the terms, rather than the beautiful.

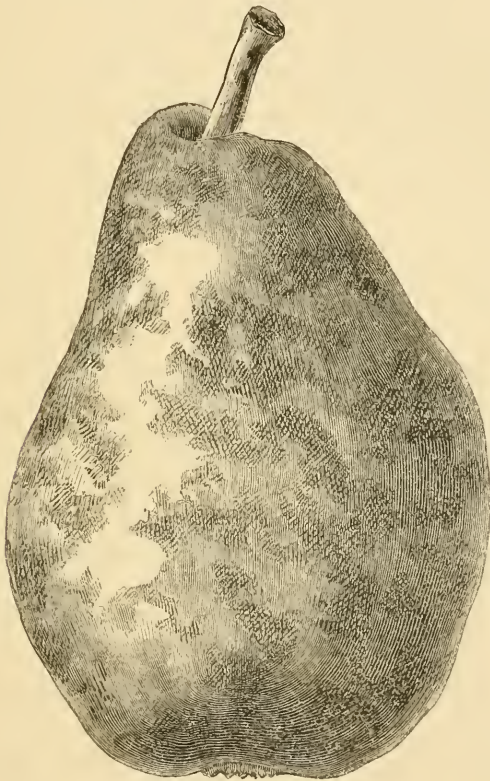
Our house was originally modelled upon the same plan, and had been owned and occupied by those who held the same utilitarian views; but a few tasteful touches, a little effort at home embellishment, with cheap materials, had quite transformed the once-homely interior. A neat, inexpensive paper upon the walls of our little front parlor gave it a very clean appearance; and the numerous pictures hung around looked far better upon such a background than they would have done upon the gay figures of the old pattern. Then our furniture, though plain and well worn, was comfortable; and the centre-table was always covered with books, magazines, and newspapers, and furnished with an excellent study-lamp, around which the family was nightly gathered. The corner book-shelves, which my brother had made, and I had ornamented with leather grapes and leaves, looked as well as if they had been much more costly, and contained a number of choice standard volumes.

The white curtains at the windows, made of simple spotted muslin, were neat and unpretending, if not elegant; and, with our green blinds outside, we were able to darken the room at pleasure. Useless and unnecessary as these trifles may have appeared to our differently-educated neighbors, yet to us they were indispensable ingredients in the formation of a true home-feeling, and entirely compatible with a farmer's pursuits and interests. Had we been extravagant in the amount of such expenditures, the case would have been altogether different.

H.

THE NEWHALL PEAR.

SIZE large, above medium ; form obtuse pyriform, inclining to oval or egg-shape ; surface a little irregular and uneven ; stem three fourths to an inch in length, inserted without much cavity ; calyx small, partly closed, set in a corrugated basin, scarcely below the apex of the fruit ; skin smooth,



yellow at maturity, with a few traces or blotches of russet, sometimes with crimson dots and a cheek of blush on the sunny side ; flesh melting, very juicy, buttery, and tender ; flavor sweet, tolerably rich, with a musky aroma resembling the Bartlett. Season, last of October ; quality, "very good ;" tree hardy, healthy, and prolific.

The Newhall Pear is one of the varieties raised from seed sown at same time with Clapp's Favorite ; the original tree still remaining in the collection of Messrs. F. and L. Clapp, Dorchester, Mass.

Marshall P. Wilder.

PEAR-GROWING IN "EGYPT."

THE hill-country of Southern Illinois, which embraces a territory half as large as Massachusetts, extending from the Mississippi to the Ohio, and traversed longitudinally by the Illinois Central Railroad, is a district peculiarly adapted to the growth, in great perfection, of most kinds of fruits common to temperate climates. Apples are an emphatic success here, the trees being very healthy, all varieties hardy, and the crop, as a whole, reliable *every year* ; there being but one exception to this, I think, in the last twenty years. Peaches are probably nowhere better or more reliable, as we have fair crops two years out of three. The berries are all at home ; strawberries particularly yielding greater returns for the culture given than in any other section within my knowledge.

But it is of pears that I would speak, as of richer promise than any other fruit, and more promising here than in any other locality in the Mississippi Valley.

It is but ten years since fruit-growing was first commenced in this region as a business ; and pears were sparsely planted at first, so that our experience with varieties is limited as to time and number : but from the general health and productiveness of the old trees scattered over the country by the original settlers, and from the general effects of climate and soil in both trees and fruit of the later planting, we look with great confidence to the results of the next quarter of a century in this department of orchard-culture.

The product of the first small planting of good varieties has stimulated quite an extensive planting at all points noted for fruit-growing. This amounts to about fifty thousand trees in this immediate neighborhood (South Pass), to which every year makes respectable additions ; and we anticipate, that, ere many years, the Egyptian pear-crop will be sensibly felt in most of the fruit-markets of the country.

Of varieties I speak with caution, as experience varies considerably, in different localities, with the condition of soil and the elevation, two or three hundred feet of altitude so entirely changing the complexion of most varieties as to place them often beyond the recognition of their friends ; and because the next ten years is likely to change the judgment of growers as to many kinds.

Our earliest valuable pear is the DOYENNÉ D'ÉTÉ, which ripens with us the last of June. It succeeds well as dwarf or standard. It is profitable, mainly, because it has no competition. The MADELEINE, at the same season, cracks badly with many, and is but little planted. BLOODGOOD is not much grown, but is thought well of from its season, early bearing, and fair quality ; though its appearance is against it. BEURRÉ GIFFORD is a pear which has given great satisfaction to all who have fruited it, notwithstanding its faults as a tree. Its good size and quality, and great beauty of form and color, make it a favorite ; and it will bring the highest prices in all markets. No pear of its season will be so largely planted hereabouts. TYSON, DEARBORN, and JULIENNE are planted in a small way ; but it is too early to speak for them. ROSTIEZER is quite widely but not largely planted, and, I think, has not yet become popular.

In Egypt, as everywhere, the BARTLETT leads all others in popularity and in the quantity planted. It succeeds magnificently with us, notwithstanding some inclination to blight. But, when blighting, it grows and bears and blights and *pays* right along, and more of the last, the growers say, than any other kind ; and it will be planted more largely than any thing else, blight or no blight. In a few years, Southern Illinois will supply the Boston and New-York markets with Bartletts in their season, adding a month to your enjoyment of that variety.

BELLE LUCRATIVE comes with the Bartlett, which is its greatest fault ; for the latter outsells it, notwithstanding its superior quality. It is a fine grower as dwarf or standard, a profuse bearer, and but for its season, and a little tendency to rot at the core, would be one of our most valuable market kinds. That superb pear, the HOWELL, also follows the last two excellent kinds too closely, ripening the last half of August ; and needs to be carried through the preserving-house into a later season to bring its worth in market. The Howell receives the unqualified admiration of its

acquaintances. Without fault as a tree, with high, refreshing, vinous flavor, most graceful form, and inimitable waxen finish of skin which fastens attention, it promises with some growers to supplant the Bartlett.

FLEMISH BEAUTY does not give satisfaction here. The leaves fall prematurely from the tree, and the fruit rots prematurely at the core. LOUISE BONNE DE JERSEY is more largely set than any other dwarf, but has an uncertain standing. It often casts its leaves, and is frequently astringent, and seems to need rich soil, high culture, and thinning of fruit, to be uniformly excellent. It can be relied on for great crops; and, when rightly grown, will be profitable. WHITE DOYENNÉ is found in every orchard; but it cracks so frequently, as to forbid its extension. DUCHESSE D'ANGOULÊME has received great attention, and, when well grown and severely thinned out, is truly the "queen of pears," if great size constitutes a queen. My own taste, however, prefers a smaller and more comely queen. BEURRÉ DIEL, grown on our high hills, cracks badly, and is astringent; but on lower and richer ground, as at Villa Ridge, it attains very great perfection, being in all respects a pear of the very first class. The ONONDAGUA is a noble and worthy pear, but sometimes rots at the core.

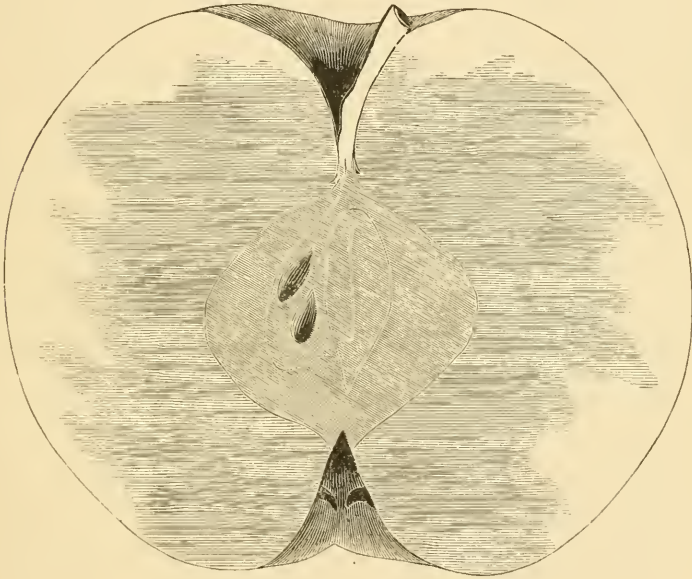
But the pear which promises at present to fill its season the most completely, and occupy much space in our orchards, is BEURRÉ D'ANJOU. When well grown, we neither want nor need a better thing. Following it closely, but filling a long season, and filling it with a delightful sweetness, which is long and fondly remembered, comes the LAWRENCE, without any peer, in the months of November and December.

For the winter months, I cannot speak with much certainty of any thing but EASTER BEURRÉ. This most excellent and valuable pear, which cannot get sun enough in your stormy New-England clime to mature its rich juices, seems to be as much at home with us as on the sunny hillsides of its native France. Our long, warm autumns give it plenty of time to ripen; and it may be too early yet to speak decisively on this point: yet it seems, so far, to be free from that inconstancy which it has shown in the North and East. A very high Western authority regards this as our most valuable variety. If we can grow good Easters, can we grow too many? and need we be anxious about any other winter-pear?

Parker Earle.

NEW APPLE.

HAMILTON. — Introduced from the South into Southern Illinois by J. A. Crain of Pulaski County, Ill. ; and exhibited before the State Horticultural Society at South Pass, Sept. 3, 1867. In many particulars, this fruit resembles the Buckingham, which is extensively cultivated in that region ; but Mr. Crain reports the tree as different, and that the period of ripening is later. Fruit large, roundish, irregular, somewhat ribbed ; surface smooth,



mixed dark-red and yellow, splashed with purple ; dots large, scattered, yellow ; basin deep, abrupt, folded ; eye large, open ; cavity deep, wavy, brown , stem medium to long, knobby ; core medium, regular, open, clasping the eye ; seeds numerous, plump, dark ; flesh yellow, breaking, rather juicy ; flavor sub-acid. Uses, market and family ; season, September and October.

THE PHLOX.

WE choose the phlox for a theme: first, because it is a plant wholly of American origin ; secondly, for the great beauty of many of its varieties ; and, thirdly, for the hardiness and vigor which admirably adapt it to general culture. The tribe of the phloxes is divided into many families, of which the most prominent at the present time is that called by botanists *Phlox paniculata*. The original *Phlox paniculata*, the parent of the rest, grows wild in various parts of this continent. Its innumerable descendants, improved by cultivation and by hybridization with other species, form an admirable group of plants, in which the somewhat dingy purple or white of their progenitor is transformed into unnumbered shades of lilac, salmon, bright purple, pure white, white, and vivid crimson. This change has been brought about in two ways : first, by intermarrying *Phlox paniculata* with other species of the genus, which, though inferior as respects vigor of constitution and habit of growth, are in some cases more brilliant in color ; and, secondly, by a long-continued raising of seedlings, and a careful selection of the best through successive generations. As respects intermarriage, or hybridization, it is by no means with every member of the same genus that *Phlox paniculata* will unite ; but there are several for which it shows an affinity. Some have gone so far as to say that it is perfectly ready to ally itself with the beautiful annual, *Phlox Drummondii*, whose clear and vivid colors have of late years become familiar in our gardens. For our own part, we can only say, that, for several seasons, we diligently applied the pollen of the latter with a camel's-hair pencil to the flowers of *Phlox paniculata*, and never could see that it produced more effect than so much dust or ashes. Phloxes are not very easy to hybridize ; for the reproductive organs are so hidden in the small tube of the flower, that to operate on them successfully requires the patience of Job. We advise the amateur, unless his zeal for science is irrepressible, to simply plant the different sorts side by side, and let the bees carry the pollen from one to the other.

We have raised many hundreds of phloxes from seed ; and, as the process and its results are very pleasant, we will give the fruits of our experience. We will take three very distinct varieties to begin with, all belonging to the

species *paniculata*, more or less tintured, probably, with the blood of other families. The first shall be Madame Houillet, of a superb deep crimson ; the second, Madame Flandres, of a delicate salmon ; and the third, Madame Sueur, white, with a crimson spot in the middle. We plant each by itself, so far from other phloxes, that the bees are not likely to mingle the pollen. If we wish to be perfectly sure, we envelop each head of flowers with gauze to keep off the bees. Early in September, the seed is ripe : on a bright, warm day, you may hear the capsules bursting with a sharp, snapping sound as the sun dries them. Now gather the seed, separate it from the pods, and sow it, each kind separate, in any light, rich soil, at a depth of about the third of an inch. As winter closes, cover it with a few boards. The plants will appear in May ; whereàs, if you had delayed your sowing till spring, not one seed in twenty would have germinated at all. When the plants are an inch high, take them up with the point of a knife, and plant them six inches apart, in a warm, sunny place. Most of them will blossom before the end of the season ; and you will find it interesting to watch the features of the offspring. Those of Madame Houillet will, in the main, show traces of the parent. Various shades of crimson will be their prevailing hue ; in some cases as fine as, possibly even finer than, the original. Many, however, will show a tendency to revert to the dull purple of the native species from which their race has sprung ; while some will very probably “sport” to a variety of red, pink, or rosy tints. Of the offspring of Madame Sueur, about one-third will be white, with a spot in the middle, like the parent, and the rest pink, purple, or rose ; while, in the case of Madame Flandres, the results will be analogous, though the proportion of handsome seedlings will probably be less than with the former two. All this is on the supposition that you have kept the three sorts carefully apart at the time of flowering. If, on the contrary, you allow the pollen to mingle, nobody can predict what the result will be. One thing only is certain, — that some of your seedlings will be as good as the best named sorts in cultivation.

It is our belief that the phlox has reached the highest point of development of which it is capable, and that very little further improvement is to be looked for, except, perhaps, in the production of a scarlet flower ; a result which has lately been approximated, though not fully attained, except

in the case of the annual species. Possibly, too, a double phlox may one day be produced ; and this would be an excellent acquisition.

Perhaps we have begun at the wrong end of our theme ; for what the amateur will probably most desire to learn is, not how to raise seedlings, but how to choose and cultivate the varieties already known. The following are twelve excellent sorts ; there are none better among some two hundred which we have cultivated :—

Duguesclin, bright rosy crimson, very large flower. *Rubra superba*, deep blood-red. *D'argent*, white, with a bright-purple eye. *Madame Marseau*, white, with a carmine eye, beautifully shaded. *Madame Flandres*, salmon. *President Morel*, deep purplish-red. *La Reine Louise*, slaty-purple, shading into a white centre. *Triomphe de Twickel*, striped red and white. *Wilhelm Schule*, rosy-purple, white eye. *Mrs. Standish*, pure white, bright-crimson eye. *Madame Sueur*, crimson centre, shading into a white edge. *Evening Star*, purplish-rose, white and crimson eye.

All these belong to the race of *Phlox paniculata* ; that is, to the tall, late-blooming phloxes. Their time of flowering is various, extending from the end of July to the beginning of November. Nothing is easier of cultivation. Planted in any good garden-soil enriched with well-rotted manure, or, what is better, with leaf-mould, they will grow vigorously, and produce masses of bloom. They can be transplanted, even when in full flower, by lifting them with a ball of earth attached to the roots. For out-door effects, they rival the hollyhock, and are far more easily managed. They are easily propagated by dividing the root, or by cuttings of the young stems, which strike root with the greatest readiness. When wanted in perfection, they should be taken up every year or two, divided, and reset in soil freshly enriched.

The summer phlox, *Phlox suffruticosa*, forms a group distinct from those just mentioned. The varieties of this family bloom in July. They are not so tall or so robust as the autumn phloxes, and are easily distinguished by their long, glossy leaves. Their culture is equally simple; though some of them are better for a little winter protection. Their colors are less vivid, though perhaps more delicate, than those of the former group. Among the best are *King Leopold*, white, striped with pink ; *Alba magnifica*, pure white ; *Madame de Brobègues*, slate-color, shaded to white ; *Speculum*,

purple centre, shaded to a white edge ; *Madame Wagner*, pink centre, shaded to a white edge ; *Cromwell*, deep rose, very large flower ; *Madame Doublat*, light crimson ; *Van Houttii*, purple, striped with white ; *Mrs. Forbes*, bright purple and white.

There is a still earlier phlox, blossoming in June, called *Phlox divaricata*. The flowers are of a slaty-blue color, and are produced in great profusion. The plant rarely grows above eighteen inches. Still earlier, and of still more humble growth, is the well-known species, *Phlox subulata*, popularly called "moss pink," which, in May, covers the ground with masses of pink-and-white blossoms. Thus, from spring to approaching winter, the phloxes yield an unbroken succession of bloom.

These are all perennial, and all hardy ; but, in a notice of this brilliant tribe of plants, one must not forget the Texan annual, *Phlox Drummondii*, which, in brightness of color, may be said to outshine them all. There are varieties, — white, crimson, purple, violet, rose, and scarlet ; and others variously striped, spotted, and marbled. The bloom is exceedingly profuse, and lasts a long time. Seed may be found at any seedsman's, and it germinates readily if sown in a warm border in May. Seed of the different varieties may be had in separate papers ; and it usually "comes true," — that is to say, produces flowers in color like the parent. No annual is better worth cultivating.

F. P.

VIOLETS FOR WINTER. — The best plan is to take off the suckers or runners in May, and pot them singly in small pots in a compost of turfy loam two-thirds, and leaf-mould one-third. Place them in a cold frame, and keep close, moist, and shaded, until established. Remove the lights gradually, keep the plants well supplied with water, and, when the pots become full of roots, shift into six-inch pots, draining these well, and using the same compost as before. The plants require moisture and coolness during the summer, and they will grow well if the pots be plunged. In September they may be returned to a frame, and remain plunged in ashes, with the protection of a mat over the lights in severe weather, drafting them into the greenhouse as they are wanted to flower, and always selecting the most promising.

AN INSECT DESTRUCTIVE TO SQUASH-VINES.

DURING the month of August, the leaves of our squash-vines often present a riddled appearance, disclosing the presence of an enemy. If we examine the edges of the holes, we shall find the plump, rounded larva of a beetle, feeding sometimes on the upper, though generally upon the under surface of the leaf. It belongs to the family of *Coccinellidæ*, or lady-bugs; and although, as a general rule, the species of this group are of positive benefit to vegetation in destroying large numbers of plant-lice which blight our fruit and shade trees, a few are herbivorous in nature, and among them the insects of which we are speaking. In the larval state, during which they inflict almost all the injuries of which they are capable, they are of a bright-yellow color, covered above with long, branching, black thorns, sometimes tipped with white, and arranged in six longitudinal rows. The space between the two middle rows is widened anteriorly by the more lateral insertion of the three first spines. Behind the thorns of the first segment, there is a transverse row of short, fine, black-tipped hairs. The head, the legs, and the under side of the abdomen, are covered with short, fine hairs; the tips of the legs are black. When fully grown, the larvæ are about three-eighths of an inch in length by a little less than half an inch in breadth. They crawl but sluggishly, using their terminal segment as an additional leg; and live in large numbers on the squash-vines, where their voracity is attested by the rapidity with which their cast-off skins increase in size and number. These skins are white, transparent pellicles, covered with characteristic thorns, and preserving in some measure the shape of their former inhabitants.

Toward the latter part of August, or the first of September, the larvæ are fully grown, and begin to change to their pupal state: they stop eating, and crawl to a suitable place, generally upon the top of a leaf, where they can fasten themselves by their terminal segments to one of the veins; then slough their skin, and appear as pupæ.

The pupa is of the same general color as the larva: the eyes are dusky, and the stumpy feet crowded together on the breast. The whole body, but more especially the head, thorax, and appendages, is covered with

short, simple, black spines. The outer portion of the posterior edge of the first thoracic segment is bordered with black, as are also both edges of the elytra, or wing-covers; though the color fades away before reaching the tips. There are two other black bands upon the elytra, parallel to the first, and nearly uniting as they approach the tip. Between the elytra, at their base, are two little black dots. The edge of the first abdominal segment is marked by two black bands, nearly meeting in the centre, and having each end bent forward; the second, third, and fourth segments have a short black dash upon either side of the outer posterior edge; the fourth and fifth segments are darker than the others; the last segment is furnished with two long fleshy protuberances, by which the pupa clings to the old, wrinkled, larval skin which still conceals that portion of the body lying beyond the tip of the wing-covers. All the markings which have been described, excepting the two dots between the elytra, and the black dashes of the second, third, and fourth abdominal segments, are frequently wanting: out of a large number of specimens which I obtained in Connecticut, scarcely one had any of these markings, while they were invariably present in those examined at Cape Cod.

No similar differences were apparent in the perfect insects reared from the different kinds of larvæ. The pupæ are about one-third of an inch in length by one-fifth in breadth and one-eighth in height, and remain but a few days in the pupal state. When they emerge, they do not seem to be possessed of a roving disposition, but may still be seen for several days on the plant where they have spent their lives, and for whose leaves they have still a relish.

In the perfect state, these beetles are of the same general color as before, although the shade is darker. The elytra have two transverse rows of roundish black spots, five in number; the first row extending across the basal portion, the second transversing the central region: the middle spot in each of these rows is divided by the suture of the wings. In the centre of the remaining apical portion of each elytron is another larger, round, black spot: there is a black spot upon the thorax, in the middle of the posterior border; and three other spots, smaller and sometimes fainter, are placed, one upon the middle of the anterior edge, and the others upon either side of the thorax. The eyes and end of the jaws are black, and

the under side of the body is occasionally quite dusky. The whole body is minutely punctured and closely covered with short, fine hairs, invisible to the naked eye : its length is one-third and its breadth one-fourth of an inch.

This beetle was first described by Thunberg, under the name of *Coccinella borealis*, but is now placed in the genus *Epilachna*. Being of so large a size, and affording such evident indications of its presence, this insect can be most readily destroyed by hand-picking. There can be no excuse for those who complain of its ravages if they fail to make use of this simple, rapid, and effectual expedient ; the more rapid and effectual, the earlier it is put into practice.

Samuel H. Scudder.

PEACH-CULTURE.

THOUGH the peach-tree is a native of the far-distant East, where the climate is quite different from that of many parts of this country, yet it has flourished, or still flourishes, in nearly every section of the United States. There is, probably, no country on the face of the earth where so many and so fine peaches are raised as in our own. Our bright sun and clear atmosphere enable us to ripen this fruit perfectly without the aid of brick walls or other artificial protection. It is true that the peach-tree does not thrive in some portions of the States as it did before the forests were stripped off ; but this fruit has not been affected much more than some other fruits have been. Within twenty years, the peach-crop was nearly as sure in the New-England States as the apple-crop, and regarded as a much more profitable one than the pear. New Jersey was, years ago, famous for peaches ; but when the disease known as the yellows swept over that State, as it did over many others, the trees were destroyed in immense numbers, and the culture of this fruit waned. The States of Delaware and Maryland have been, and still are, quite noted for their extensive peach-orchards. The Middle and Western States have all engaged, with more or less success, in the growing of this delicious fruit. In years gone by, peaches sold for quite low prices as compared with those that have been obtained for the last six years ; while

in some localities (and the same may be true now to a limited extent) great quantities were dried, distilled for peach-brandy, or even fed to the pigs. The chief reason why such a disposition was made of the fruit was, that it cost too much to get it to market ; or that the market was so far distant, and the facilities so poor for transporting it, that it was no object to dispose of it in that way, however fine it might be. There are many ways in which the fruit may be used ; but the most profitable one, no doubt, is to send it directly from the tree to some large city or town for immediate consumption.' It will be freely admitted by those conversant with the subject, that it is much more difficult in some parts of the country to raise this and other fruits now than in former years. The virgin soil just reclaimed from the forest seemed to be very favorable, not only to the growth but the productiveness of fruit-trees of all kinds. The extensive forests were a protection and shelter for the fruit-trees ; while these same forests caused an abundance of rain in summer, and snow in winter. The snow served an excellent purpose, covering the ground all winter ; while the weather was steady, and not subject to such great and sudden changes as frequently occur in these latter days. It is said that the fruit-buds of the peach will be killed when the mercury goes down to ten or twelve degrees below zero ; and this is true of the present time : but we are informed by close observers who can remember back sixty or seventy years, that though the weather was often very cold, yet the peach seldom failed. It cannot be expected that the colder and more northern parts of the country will produce this fruit with the highest success (that privilege is reserved for those who live in a more congenial climate) ; but this should not prevent the lover of peaches from planting trees, — the best, hardiest, and healthiest that can be procured, even on the cold hillsides of New England, or, better, in the protected garden, — for they will get a fair crop certainly as often as two years in four. In all the Northern States, peach-trees must be grown with greater care than in a more congenial climate. The system adopted should be such as will insure perfectly well-ripened wood ; and, to secure this desirable object, the tree should be treated in a similar manner with the cherry, using only so much manure as will give a medium growth of new wood. In those States where there is no danger of injury from the winter, a larger growth may be encouraged without much danger to the tree. One of the

most important things connected with the treatment of the peach-tree is the pruning, or rather shortening-in process. Those who have never made the experiment will be perfectly surprised to see the difference between a tree that has been allowed to take its own course, and one that has been carefully shortened in each year. The first will, after a few years, show only long, lean branches, presenting an awkward appearance, and being at the same time unprofitable, because but little new wood is made to bear fruit, and that so remote from the trunk, that the branches on which it grows are liable to be broken off and destroyed ; while those that have been properly shortened will be low-set and bushy, with a fine, symmetrical, well-rounded head, with an abundance of new wood for fruit-bearing. The latter mode is incomparably the better one. One serious hinderance to the successful cultivation of this fruit during the past few years has been the yellows, — a disease that has been induced by the forcing process, which has been pursued with this tree. We are glad to believe that this disease, like the potato-rot, is disappearing ; and that, with proper treatment, peach-trees will remain healthy for many years. We have always believed that the loss of trees was often attributed to this cause, when, in fact, they were destroyed by the peach-borer. This insect is a great pest in many places ; and only the utmost vigilance will prevent the destruction of whole orchards by this silent enemy.

It has been a favorite belief with some, that the poorest land was the best for the peach ; but we think experience has shown the fallacy of this theory. If we were to advise as to the best soil on which to plant a peach-orchard, we should say, without hesitation, plant on land that will grow a good crop of corn, — a good soil with a deep-yellow sandy or gravelly loam subsoil, no matter if somewhat rocky : never plant on a wet, adhesive soil ; and avoid, if possible, the opposite extreme, where the trees would suffer from drought. The more sheltered the location from cold, sweeping winds, the better ; though it is not best to plant on the south side of hills, where the trees would start early, in those parts of the country subject to late frosts in the spring. Western or even northern exposures, if they have protection, will be preferable. Having selected the proper soil, prepare it well by a fair supply of such manure as seems best adapted to the peach, — ashes, bone-dust, or old horse-manure composted with muck ; then plough it thor-

oughly, and mark off the rows for the trees. The trees to be set should be only one year from the bud, and, when set, should be cut back to within a foot or fifteen inches of the ground, or about that distance above the bud if it be a budded tree. The trees will make good growth; and the next and each succeeding spring, before the buds begin to swell, the extremities of the branches should be shortened at least one-half, for the reasons we have already given. When three or four years old, fair crops of fine fruit may be expected; and, with good treatment, the trees ought to continue healthy for fifteen or twenty years, yielding large quantities of fruit. The greatest care should be taken to secure stones from healthy, thrifty trees free from the yellows. This disease has, without doubt, been extensively disseminated by using the stones from diseased trees, and by buds from the same. Seedling trees are generally more free from disease than budded trees; and, if it were possible to secure such as would yield good fruit without budding, it would be a great advantage. We have known a few varieties that would produce their like from seed; but they were not good enough in quality to be valuable.

When the ground is wholly given up to peach-trees, they should be planted about fifteen to eighteen feet apart each way; and, for a few years, the plough or cultivator may be run each way through the rows, and the land kept in good condition at small expense. Some cultivators object to ploughing and cultivating among trees during the summer, as it destroys the fibrous roots that come near to the surface. This will depend much upon the nature of the soil: if light and thin, the roots will naturally work near the surface. And the best treatment such an orchard could have would be a thick coating of mulch; while, if the soil was richer and deeper, the roots would mostly strike down out of the way of the plough-point.

The land should not be planted with peach-trees the second time without a long interval of rest between the plantings.

In planting an orchard, no poorer policy can possibly be adopted than that of buying trees of inferior sorts merely because they are cheap; for such trees always prove to be dear in the end. Good fruit will always command a ready sale, even when poor fruit cannot be sold at any price. Trees that will only produce fruit fit for pigs should not be allowed to encumber the land. In planting extensively for market-purposes, it will

not be profitable to set a great many varieties, but such as will follow each other from the best early to the late sorts. It is only by actual experience that one can know what particular varieties are best adapted to each section; though this fruit does not seem to be so capricious in this respect as the pear. Overcropping the trees should be carefully avoided; for not only is the fruit very small when too many are allowed to remain, but the trees are permanently injured by the excessive task that is laid upon them. Every person will, before planting extensively, naturally inquire as to the facilities for getting the crop to market when grown; or, if too far from market to be sent in a fresh state, then what the facilities are in the neighborhood for canning the fruit.

The demand for and consumption of this healthful and delicious fruit has largely increased, and prices have greatly advanced within a few years; so that the grower has been well paid for his labor and pains, after paying all expenses of transportation and sale. And not only has the fruit met a ready sale when sent in a fresh condition to market, but a brisk demand has sprung up nearer home, where factories have been established for the canning of fruits. This system has grown up rapidly, and has become a very important branch of trade, and, though already large, is yet in its infancy. Many at the East who cannot *raise* peaches will prefer to buy them *canned* rather than to buy stale peaches in the market, and put them up themselves; one reason being, that the fruit is much better when left to ripen on the tree than when taken in a hard, greenish state, and shipped to a distant market. When the establishment for canning is conveniently situated, the fruit may be allowed to attain a greater degree of perfection before being put up. If the crop is larger than can be disposed of in any other way, then drying may be resorted to, and though involving considerable labor, yet, at present prices, will pay well. But the chief reliance for profit by those reasonably near a large city, and enjoying good facilities for sending the crop to market, is to pack in crates, and send them fresh to the consumer daily. When the grower can reach a good market at a reasonable cost, this crop is one of the most profitable that can be grown, not excepting, possibly, grapes. No branch of horticulture opens a wider field than this; and we confidently expect to see large tracts of country all through the West and South-west devoted to peaches for canning and dry-

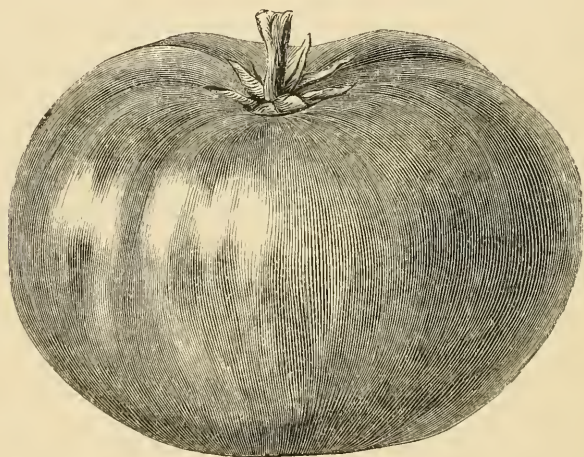
ing, and possibly for transportation to distant cities for table use. Cultivators must judge for themselves as to the best way in which the crop can be turned into cash, and act accordingly. Lands that can now be purchased at moderate prices may be secured along railroads already built, or near projected lines, set out with peach-trees; and in a few years, as towns spring up in the neighborhood, and cities within easy distance increase in population, the fruit will all be taken at remunerative prices. This matter of supply and demand has troubled many a fruit-grower, as it has those engaged in other pursuits; and they often ask if all the fruit that can be raised will find a ready sale. The question has been answered over and over as each succeeding crop of fruit has matured and been sent to market. The fact is, the greater the supply, the greater the demand. Not only is the population of the country rapidly increasing, and so requiring a greater quantity to meet the demand, but it is a well-established fact, that the same number of people consume a much greater quantity of fruit of all kinds now than formerly. If this be the fact, then those who desire to grow that which will yield the best returns should consider well the subject of peach-culture before the time comes round for planting trees.

NORTHERN MUSCADINE.

WE often see this grape, to our great surprise, put down in nursery-men's catalogues among good varieties. How any man can possibly raise it who is familiar with good grapes is a mystery we cannot fathom. It has a hard pulp; rather small bunch, from which the berries drop as soon as ripe. It is early and sweet; but that will not atone for the lack of other good qualities. The time has gone by when this variety should be recognized or tolerated in good company. The last we saw of the only vine of this variety we ever had, it was going through the air in the direction of a brush-heap, that was soon after converted into ashes.

NEW TOMATO, GENERAL GRANT.

I RECEIVED last spring, through the kindness of a gentleman of this city, a small package of the seed of this new tomato for trial ; too late, however (May 15), to fairly test its merits on the score of earliness, but still in season to satisfy me that it combines more valuable qualities, aside from earliness, than any other variety with which I am acquainted. If, upon further trial, it should also prove early, it will become, as it will deserve, the most valuable variety yet introduced.



It originated, I am informed, with an amateur ; a gentleman who has for a long time taken great interest in the cultivation and improvement of this popular vegetable. During the past five or six years, he has cultivated this variety, in connection with the leading sorts, both new and old, for the purpose of testing the comparative merits of each as to quality and earliness ; and, in every case, this variety was found to be superior to all others.

The fruit is above medium size, measuring from three to four inches in diameter, and grows in clusters ; form round, slightly flattened, very regular, symmetrical, and rarely ribbed or wrinkled ; color brilliant glossy crimson ; flesh unusually firm, solid, and free from water, — more so than any variety

with which I am familiar ; skin remarkably fine, smooth, and shining ; productive, and well flavored ; bears carriage well, and keeps in good condition a long time after being gathered.

Specimens of this tomato were on exhibition at the last Annual Exhibition of the Massachusetts Horticultural Society, and received the first prize for the best single dish.

If, after another year's trial, it should prove a superior variety, — of which I have little doubt, — the gentleman who has control of the entire stock of seed will introduce it to the public. *C. N. B.*

[We saw on exhibition the specimens referred to by our esteemed correspondent, and, so far as appearance goes, can fully confirm all he has said. The specimens were by far the handsomest and most perfect ones we ever saw. They were greatly admired by all. — Ed.]

THE BARBERRY.

THIS plant makes a very fine hedge when well kept ; and it seems to be growing into favor for this purpose. Its beautiful light-green leaves in early summer, with the pretty yellow blossoms scattered here and there over the well-trimmed surface, render it an attractive object. We have seen hedges of barberry used to great advantage to cover up old walls beside highways. It is also quite ornamental when grown in groups and clusters, both on account of its flowers and fruit ; and useful too, for the fruit makes good preserve or jelly. It is easily propagated by seed, layers, or off-shoots or suckers. Those produced by the first two methods would be the best, for they would not be likely to throw up suckers so badly as those raised from suckers ; and, where fruit is desired, are better, for those from suckers are less fruitful. There is a seedless variety that makes a much better preserve, because free from the large seeds that render the fruit of the common sort somewhat objectionable. We like and recommend the barberry for hedges ; though it has one fault, — that of throwing up suckers, and spreading like the lilac : but these can easily be grubbed up, and the hedge kept within proper limits.

THE ELEMENTS OF A FLOWER.

IN "The Horticultural Journal" for October, I tried to enable my readers to refer every plant, herb, shrub, or tree, to one of four divisions, — flowerless, endogen, gymnosperm, and exogen. Although the last must be subdivided, we cannot well carry classification farther without resorting to words that are not used in common conversation, or not used in the definite technical sense which botanists find necessary. For, when a child speaks of a *leaf* from a rose, he may mean either of five different things to which science gives five different names, — leaves, leaflets, stipules, sepals, and petals. A person who had painted roses enough would have as definite ideas of each without the names as with them; but he could not as conveniently talk about them, nor write of them. To know any number of unusual words would not be to know botany; but it would be inconvenient to learn much of botany without mastering very many of them.

And then, in a certain sense, names are things. You cannot think without the use of names, nor think accurately without their accurate use. It is no reproach to science, then, that it teaches a man to name his tools. A man might, indeed, know the name of every instrument used in surgery, and of every subdivision of the human body, and still be no surgeon; but it is certain that a man who would become a surgeon must and will learn these names. So every child that handles flowers ought to know the technical names by which all their parts are indicated by the use of one single word for each; for in this way only is learned that accurate observation of flowers without which no one will ever become a botanist. It is my object now to explain these terms so clearly, that any little child who reads them with a flower in hand can understand them.

Take a flower of which the outer part is green, and there are inner leaves which are not. Be sure that you do not take one of the composites, — the order to which the sunflower, aster, daisy, and dandelion belong. These are a tenth of all our flowering-plants, and perhaps a half of those that blossom in the fall. Nothing else will come amiss except the four-o'clock. We will take, if we can, a single rose.

Even the flower-stem has a name different from a leaf-stem. It is called

a PEDUNCLE. The peduncle dies or falls when the fruit ripens, if not before. The stem of an apple is a peduncle. The peduncle of a dandelion is hollow. When a peduncle has more than one flower on it, the little stem of each is a PEDICEL. The stem of a red currant is a pedicel.

The leafy part of the flower is named the PERIANTH. Flowers that have no perianth, as those of the oak, nut, and willow, are called *achlamydeous*.

The outer part of the perianth is the CALYX. Rarely it is some other color than green, as in the prince's-feather. The calyx is made up of leaves called SEPALS. In exogens, they are apt to be five in number.

If there be within the calyx another row of more delicate leaves, they are the COROL. The corol consists of PETALS. Exogenous flowers have mostly five petals. If the petals have a narrow part or stem, as in pinks, the stem is a CLAW. The broader part is the LIMB. If the petals be united into one, as in the phlox, the narrow part is the TUBE; the broad, the limb. Those plants which have a calyx, but no corol, are called *apetalous* or *monochlamydeous*.

Within the perianth are usually two classes of reproductive organs. The outer are called male organs, or ANDRÆCIUM. The andræcium consists of STAMENS. Each has a vessel, mostly two-celled, called the ANTHER, generally mounted on a stem, the FILAMENT. In exogens, the stamens are often five or ten in number.

The other organs, the innermost, when present, are the GYNÆCIUM. It consists of CARPELS, each of which has normally, at the base, a cavity for seeds, the OVARY; above it, a slender part, the STYLE; and at or near the summit, a moist spot, the STIGMA. The ovaries are frequently united into a mass called a GERM, and the whole gynæcium is called a PISTIL. Each carpel, if distinct, is often called a pistil. If the gynæcium stands on a stem within the flower, that stem is a GYNOPHORE. Gynandrous plants (orchids) have the gynæcium and the andræcium united into one mass. If a flower have only one set of reproductive organs, it is called *monoclínous*; if both, *diclínous*. If it have an andræcium only, it is called male, or *staminate*; if a gynæcium only, female, or *pistillate*. If it contain both, it is *perfect*. If the staminate and pistillate flowers are found on the same plant, as in oak, maize, melons, and squashes, the plant is called *monœcious*; if on different plants, as the hop, hemp, elm, willow, and poplar, it is *diœcious*. All our weeping-willows are pistillate only.

We have now been over a very complete set of names. They are all that can possibly be employed in the description of any ordinary flower, except of grasses, composites, and a few other orders. None of them can be conveniently avoided when the parts they indicate are present; but some are not much used, as perianth, andrœcium, gynœcium, and gynophore. As in all lessons where very much is compressed into a very few words, it has been inevitably a dull one.

For the sake of practice, "airing our vocabulary," let us now see the accidents that may befall a flower, or the things wherein the flowers of one plant can differ from those of another. They are simply four: the organs may be diminished, suppressed, connate, or adnate.

Diminution is seen in the pea, in which the upper petals are smaller than the lower one; and in the violet, where the lower ones are smaller than the upper. Such flowers are called *irregular*.

Suppression is seen in the horse-chestnut, where the lower petal and the three lower stamens are commonly wanting. Such flowers are *unsymmetrical*.

Flowers which are neither irregular nor unsymmetrical are *regular*. Suppression in the gynœcium, reducing the carpels to three or one, is common even in flowers called regular. Irregular flowers with a corol of two lips are *labiate*. *Connate* organs are united into one piece with others of the same kind; connate carpels are found in the tomato; the stamens are connate by their filaments into a tube in the mallow tribe, and by their anthers in the composites; five petals are connate in the morning-glory and the pumpkin, and five sepals in sage and pink. Organs which are not connate are *distinct*. Flowers with connate petals are called *monopetalous*.

Adnate organs grow to organs of a different kind from themselves. In the orchids, the filaments and styles are adnate; in the cherry, the bases of all the stamens, petals, and sepals, are adnate; in those plants where the fruit seems to form below the flower, as in the apple, squash, and currant, the bases of all the organs are adnate into one mass. Organs that are not adnate are *free*.

Not only have I clearly and accurately defined forty-two botanical terms, but all the while I have kept in view another thing. I am now prepared to finish in a single sentence the classification that I left incomplete in Octo-

ber. Of the divisions then established, — the flowerless, endogens, gymnosperms, and exogens, — the last was inconveniently large. In exogenous flowers, as in all others, the petals are of necessity either absent, connate, or distinct. So they are arranged into three divisions, — apetalous, monopetalous, and polypetalous.

We have, therefore, the vegetable kingdom arranged into six divisions, not so very disproportionate in their numbers. They are, —

6. — Polypetalous : exogens with free petals. 5. — Monopetalous : exogens with connate petals. 4. — Apetalous : exogens without corol. 3. — Gymnosperms : stamens and seeds ; no carpels. 2. — Endogens : sepals, petals, and stamens in threes. 1. — Flowerless : no stamens nor carpels.

But I must warn the reader, in conclusion, that there are many exceptions. Some plants are, for good reasons, arranged with others from which they differ. Some of the flowers of many violets have no petals. Pumpkins, though their petals are connate, belong to a polypetalous family ; so, too, do the acacias, and not a few others without petals.

In another of the pea family, the lead-plant (*amorpha*), all the petals but one are suppressed. So there is no royal road to classification. It is something more than the ability to find words in a dictionary. Each attempt to classify a plant introduces to something in its nature ; and every failure will teach you something.

I. F. Holton.

SOUTH MALDEN, MASS.

THE EARLY GOODRICH POTATO.

THIS variety has been found to withstand the rot successfully during the past year, when many other sorts failed wholly or in part. It is a strong grower, and yields a large crop of good potatoes. Among many bushels grown on light, dry land, not a single tuber decayed. It ripens rather early, but remains good through the winter. It is a good market variety, as it cooks white and dry ; and it is a very desirable variety to plant extensively for market-purposes. We regard this as one of the best of the new sorts that have been sent out during the past few years.

THE AZALEA.

THE hardy species of these beautiful flowers are favorite garden-plants ;



and the tender kinds are well-known, popular, greenhouse-flowers. The

plants combine good foliage, neat habit, and brilliant and fragrant flowers, which vary greatly in color and size, and are freely produced even on very small plants. Of both the hardy and tender kinds there are single and double varieties, though the double flowers lack the grace and beauty of the single.

All the species are of the easiest culture, are subject to few diseases, and are seldom attacked by insects.

The subject of our illustration is a variety of the greenhouse azalea (*A. indica*).

These plants require the same culture as camellias. The soil should be a mixture of three parts sandy peat, and one part light loam. During the summer, the plants should be placed in the shade (but not under the drip of trees), out of doors, and receive moderate watering. They are, at this season, at rest. Before the autumn frosts, they should be removed to the greenhouse, and receive plenty of air in fine weather, and moderate watering. As the flower-buds begin to swell, the heat should be increased, and more water given. As the flowers fade, growth begins; which should be encouraged by never allowing the plants to suffer for water, or be exposed to cold draughts. As the growth matures, give more air, and expose the plants to full sunshine, that they may set flower-buds; and, when all danger of frost is over, remove them out-doors for the summer. Azaleas should be potted in the autumn, or before they begin to grow: if, however, care is used, they may be repotted at any season, except when in active growth.

The various species and varieties vary much in their season of blooming; and, by a little attention, some plants may be had in bloom almost every month in the year, as they force well, and can easily be retarded. The plants can be trained into almost any shape; and brilliant globes, pyramids, or heads of bloom, be obtained, which will be a mass of blossoms, the foliage being completely hidden by the flowers. Propagation is easily effected by taking cuttings about two or three inches long of the young shoots: insert them in sandy peat with about an inch of silver sand on the surface of the pot, cover with a bell-glass, and keep them in a temperature of about sixty degrees in the shade. When they are rooted, gradually harden them off by removing the glass, and accustoming them to a lower temperature; pot them off, and treat as old plants.

Azaleas may also be grafted by side-grafting, the stock being the more common kinds.

Seedlings are easily raised ; and very fine new varieties are yearly sent out by nursery-men, until now they are numbered by hundreds.

The following are good old varieties, — *Decora*, *indica alba*, *lataritia*, *Beauty of Europe*, *crispiflora*, *exquisita*, *Gledestanesi*, *optima elegans*, *Fielder's White*, *Iveryana*, *narcissæflora*, *Vesta*, *Murrayana*, *magnificens*, *Duke of Devonshire*, *Stanleyana*, *Toilette de Flora*.

Azalea amœna is a beautiful little species, with flowers of a reddish-purple, in what gardeners call "hose-in-hose" style : it is evergreen, and hardy as far north as Massachusetts. In the greenhouse, it flowers from January to April ; in the garden, in May.

The hardy azaleas, also known as American or Ghent azaleas, are seedlings of *A. pontica*, *calendulacea*, *nudiflora*, and *viscosa*. They vary greatly in size, color, and fragrance of the flowers, and somewhat in hardiness. Most of the varieties, of which there are scores, are hardy as far north as Massachusetts ; and some will bear a Canadian winter uninjured.

They require the same soils and treatment prescribed for rhododendrons in the January number.

They are propagated by layers, which require two years to become well rooted. They may also be rooted from cuttings, as the tender species, but not so readily. By a selection of varieties, plants may be had in bloom from the last of May till July ; the varieties of *A. viscosa* blooming late, those of *nudiflora* early. The great secret of success in the culture of these plants is to protect the roots from the drying action of the summer sun. It is a good plan to mulch the bed with moss or spent tan.

Like most of the family to which they belong (*Ericaceæ*), they are impatient of drought or wet. If planted in low ground, standing water should be removed by draining ; if in a dry situation, the soil should be deep.

The following are very fine varieties, — *Adelaide*, *aurantiaca cuprea*, *calendulacea coccinea*, do. *crocea*, do. *eximea*, do. *flammea*, *Coburghii*, *flameola incarnata*, *exquisita*, *optima*, *pontica imperialis*, do. *sulphurea*, do. do. *grandiflora*, do. do. do. *nova*, *prænitens*, *gloria triumphans*, *incarnata superba*, *Marie Verschaffelt*, *viscosæ floribunda*.
E. S. R., Jun.

PAINE'S SEEDLING.

THIS excellent variety was raised by A. W. Paine, Esq., of Bangor, Me. It is said to be a chance seedling, possessing several excellent qualities, on account of which it has been regarded with favor. The fruit is from medium to large size, oval in shape ; skin a beautiful golden-yellow marbled and spotted with red, with a thin white bloom ; stem three-fourths of an



inch to an inch long, rather stout, and nearly straight, set in a slight, one-sided depression, with a small lip ; suture slight ; the flesh is yellow, and though somewhat coarse, rich, sweet, and fine flavored, nearly equal to the well-known Jefferson, though unfortunately, like the M'Laughlin, which originated in the same neighborhood, the flesh adheres to the stone. Ripens last of August, or first of September, and keeps well ; it having been on exhibition this year the 20th of September.

PEAR-TREES IN GRASS.

It seems as though enough had been written on this subject, from time to time, to enlighten every man in the country, so that he would carefully avoid the error of planting pear, apple, or almost any other trees, in grass-land ; and yet every careful observer, as he goes through the country, cannot fail to remark the ignorance or indifference that practically exists on the subject. Some persons who so plant pear-trees delude themselves with the idea that they are really planting an orchard. We have known some to have a fever for a pear-orchard, and thereupon rush off to some nursery and buy a large lot of dwarf and other pear trees with high-sounding names, — no great matter what their real merits, — and set them in holes eighteen inches broad by half that number of inches in depth, dug out of the tough sward ; the tree crowded in without much regard to the roots, or even to the depth they are set, hastily covered, the sods turned upside down, and the work is done. The whole orchard set in this way, receiving no manure, and possibly no care after the work of planting was done, the owner, happy soul ! — happy in his ignorance or stupidity, — congratulates himself on owning a pear-orchard numbering trees and varieties by scores, if not by hundreds, and talks about “the good time coming,” when he will have fruit in abundance for himself and family, and possibly to sell.

“Mistaken souls that dream of *pears*.”

How do their dreams dissipate after a year or two, as the trees, after fighting hard for life against adverse circumstances, finally give up the ghost and gradually disappear, and “the places that once knew them know them no more” ! Thereupon he declaims against those who sold him the trees, and the uncertainty and unprofitableness of fruit-culture generally. How many times we have noticed such results in the suburbs of large cities, where those, who have been successful in other pursuits, vainly think they can add to their wealth, or at least enjoy a plenty of fruit, without even understanding or regarding the plainest laws of vegetable growth ! They do not expect their horses to be sleek and fine-looking without great care, and even the pigs in their pens fare well ; and yet the trees, which require as much or more care, are left to shift for themselves. All wrong.



WE are happy to give another letter, this month, from our esteemed correspondent, Hon. Joseph S. Cabot ; which we feel assured will be read with much interest. Mr. Cabot's well-known success in floriculture, and his large experience with florists' flowers, enable him to write understandingly ; and his remarks possess greater interest coming from one whose own garden has in years past given us many choice novelties and rare plants.

To the Editor of "The American Journal of Horticulture and Florist's Companion."

Sir,—The love of flowers is universal in England ; at least, so far as universal cultivation can justify such opinion. This grows in part, perhaps, out of the fondness of Englishmen for a country-life, for rural pastimes, sports, and occupations. Englishmen — meaning, of course, those in easy circumstances — seem to live in the country, and, unless confined to it by business, only stay occasionally in the city. In the spring or summer, the Englishman goes for a month or two to the city on business or for pleasure, to attend parliament, or to meet with his club : but his home seems to be at his country-house ; and hence he delights to ornament it, and to improve his grounds. This fondness for flowers appears to pervade all classes, — the poor as well as the rich, the lowly as well as the exalted. To find, at great places, hot-houses, greenhouses, and flower-gardens, is only what would be expected ; such are only a necessary accompaniment of such places : but when a corner of the little garden of the cottager is found, as is often the case, appropriated to flowers, and the house of the laborer to have, if room permit, at least a rose-bush or two about its entrance, or a flowering-vine creeping up under its eaves, or, if there is no room for these, at least pots of geraniums, fuschias, or daisies, in the window, it seems to justify a belief in an

all-pervading taste for flowers. In many large cities, gardens or grounds, with grass, trees, and shrubery, with walks, and sometimes drives, are provided for the public, — sometimes by the cities themselves, and then open and free to all; sometimes laid out and maintained by contribution from individuals; and, again, sometimes the result of speculation, with a view to induce the purchase of adjoining lands. But, in all cases, these gardens are ornamented with beds of flowers, and borders of flowering-shrubs. So, too, where houses of entertainment, and places of public resort for amusement and recreation, are maintained with a view to pecuniary considerations, it is not uncommon to have a fine garden attached to them; and as, in all these cases, the planting of these gardens with flowers, and the keeping of them in high order, as is the case, involves a very considerable expense, it is fair to suppose this is done in answer to the requirements of the public taste, and helps to prove its existence. One of the finest, probably the finest, of these places of public entertainment (Cremorne), has, as I have seen it stated, a garden, brilliant with flowers, of twenty-two acres in extent, attached to it, kept in as perfect order as that of the Horticultural Society; that to roll the walks, mow the lawns, and dress the flower-beds, keeps employed fifteen gardeners. The parks of London, too large to be called gardens, yet somewhat of that character, with walks, and some of them with rides and drives, through their smooth, soft grass, ornamented with flowering-shrubs, and beds of gay flowers, under the shade of fine trees, are, “in the season,” when thronged with brilliant equipages, horsemen, and persons on foot, among the most gay and brilliant scenes of the great metropolis.

Among the flowering trees and shrubs, then in bloom, that I noticed most frequently in England in May, were the horse-chestnut, the lilacs of different kinds, the hawthorns, and laburnums. There were, of course, others, that, as I made no memoranda, I cannot now recall. The horse-chestnuts were fine trees, either planted singly or in avenues. As groves by themselves, without other trees, they do not impress me as favorably. When in flower, they are very handsome; and the scarlet or red varieties make an exceedingly brilliant show. The same remarks are applicable to the crimson-flowering hawthorns. Trained as trees on a single stem, with a symmetrical-shaped head, in full flower, they are very beautiful. I remember a row of hawthorns in Prince’s Park, Liverpool, that might be described as trees, having trunks six or eight inches in diameter, with proportionately large, rounded heads, then covered with blossoms that were exceedingly fine, — the finest that I had ever seen. The lilacs, it seems to me, are not apt to have justice done them, like many other things that are common. Because they are common, they hardly receive the attention they deserve. Like the crimson pæony, that, if it were rare, would be considered a floral gem, yet, because it is seen everywhere, often in unsightly places, is held of little value; so the common lilac is so often met with in out-of-the-way places, perhaps some corner amidst rubbish of all kinds, with perhaps its branches broken and browsed upon by cattle, that none of its varieties seem to be generally held in much esteem. Yet to me the lilacs are beautiful shrubs; and some of them, especially the Persian varieties, with their slender, drooping branches, are very graceful. When planted in a suitable place, and at all cared for, covered with blossoms,

they are very ornamental, to say nothing of the agreeable odor that they exhale. I was, however, struck more with the laburnums, perhaps, than any other flowering-shrubs that I noticed ; simply, perhaps, because I met with them much more frequently than I had been in the habit of doing ; growing, too, under very different conditions, — sometimes in gardens and pleasure-grounds where they probably were carefully attended to, and sometimes where treated apparently with neglect. In my own experience, this shrub is very uncertain about flowering, often blooming once only in three or four years : yet, as I saw them in England, they were everywhere full of flowers ; and, being frequently large plants, their yellow flowers made them attractive to the eye. There is another shrub that should, perhaps, be added to the above, although not met with very frequently, and only seen in gardens and pleasure-grounds, yet there planted in the open ground, where they were apparently thriving, and thus to be considered acclimated in England : I mean the rhododendron. The rhododendron, as I have occasionally seen it in the open ground in America, is a rather low-growing, bushy plant, that, although handsome in flower, never impressed me very strongly ; but some that I saw in England appeared to me very ornamental, in part owing to their own beauty, and in part to the manner in which they were trained. Those to which I refer were trained into the form of small trees with a single stem, at three or four feet from the ground, branching out and forming a fine head, that, when in flower, were striking objects. There is a row of rhododendrons in Hyde Park, London, planted at considerable distance one from the other, trained in this manner, with trunks four or five feet high, and, as I now remember, four or five inches in diameter, with proportionally large heads, that were, when full of flowers, exceedingly ornamental, and by far the finest that I have ever seen. In the mild, moist climate of England, the ivy thrives and flourishes in perfection, covering old walls and the sides of old buildings ; creeping up to the very top of old towers, mantling them with a coat of its evergreen, shining foliage, and thus hiding the traces of decay and time ; and may be considered, though neither flower-bearing nor a shrub, as one of the ornamental plants of England. I shall say nothing of the indigenous flora of England ; I could not if I would. To find her wood-flowers, it would be necessary to seek them in places out of the route of the ordinary traveller. England is so highly and generally cultivated, that every effort would be made to banish such as noxious weeds ; and though a few ox-eyed daisies, buttercups, dandelions, and corn-poppies, would escape the ravages of the plough and hoe, those with patches of daisies in the grass, and of tall foxglove by the road-sides here and there, are nearly all that the passers-by on the roads will see. England probably contains, in her conservatories, green-houses, and botanical collections, specimens of almost every known plant on the globe. To procure them, collectors have searched the North and the South, the East and the West, Siberia and India, the west coast of America, and China, Japan, and the islands of the ocean, to enrich their own country with the floral treasures of every clime. Yet but few of these are seen unless sought for, and such are seldom used for purposes of ornament. In their flower-gardens and grounds the English make great, I might almost say exclusive, use of what are commonly called “ bedding-out ” plants, — the dwarf scarlet geraniums, verbenas,

petunias, and similar flowers. These are planted in beds dug out of the smooth turf that surrounds them, each kind planted by itself; and, as it seems to me, in this way are shown to the greatest advantage. I remember, that in one of the earlier numbers of his magazine, when probably a different habit prevailed, Mr. Loudon recommended a somewhat similar course; that is, he expressed the opinion, that, to make them most effective in gardens for the purpose of ornament, each kind of flower should be planted by itself, and that each flower-bed should be occupied by the same flower. It is many years since I read the article referred to, and my recollection of it may be at fault; yet this, as I now remember, was its substance. At the time, I was accustomed to the old-fashioned method of planting flowers in borders promiscuously, — here, perhaps, a white campanula, and there a blue monk'shood; here a red lychnis, and there a blue delphinium; with, perhaps, a crimson pæony and yellow primrose between. I was not prepared to accept this opinion of Mr. Loudon, thinking there would be too much sameness in acting in accordance therewith, and that the variety caused by the old method was more pleasing to the eye. If I had not before been led to doubt the correctness of the opinion then entertained, I think a view of the mode followed in England, of ornamenting pleasure-grounds, and arranging flower-beds, would have cured me of the error: but this was unnecessary; for I have long been convinced of the mistake, and brought to believe that Mr. Loudon had ample grounds for the opinion. Planted thus in beds, on grass, the brilliant hues of the flowers make, with broad spaces of the green grass always kept smoothly and closely mowed, a contrast pleasing to the eye; and the broad mass of their color is rendered much more effective than would be that of single plants.

Joseph S. Cabot.

DEC. 1, 1867

DOUBLE-GLAZING. — Any one who enters a greenhouse on a cold winter's night is impressed by the contrast within and without. An eighth of an inch thickness of glass separates and protects tropical luxuriance from arctic cold. When the house is long and wide, it really is surprising that this thin non-conducting surface can do its work so well. When the temperature is kept up to fifty degrees, or over, the glass is more or less free from frost; but, at lower degrees of temperature, the coating of hoar-frost which gathers upon the glass is a great protection, closing the crevices, and also doubling or trebling the thickness which separates the inner and outer air. This frozen moisture on the glass, often as light as snow, is the saving of many a house from freezing. But the advantage of this protection is more than counterbalanced by the excessive drip of the day following. By double-glazing, we can avoid this drip. It is a matter of surprise that so few houses have this double protection, especially since our winters are so much more severe than in the old country. Indeed, there are so few examples, that it is scarcely known whether the plan is desirable; and there are many who condemn it in theory. I think it due to the public to give my own experience.

I have a greenhouse, now twelve years old, a lean-to, on a hill-side, which is a hundred feet long and thirty-six feet wide, or about three times as wide as

ordinary houses. This house I have carried through the winter, at a good growing heat, with less than six tons of coal. The house is well protected, and lies low; but there is the broad exposure of thirty-six hundred square feet of glass to the cold of twenty degrees below zero. The secret of the success is in double-glazing. The roof is fixed, glazed with fifteen-inch-wide glass. The sash-bars run the entire width of the house, and are three inches deep. A groove is ploughed on each side of the sash-bars, a quarter of an inch from the bottom side. The second surface of glass is simply slipped into these grooves, and butted together, leaving an air-space between the upper and lower glass of about two and a half inches. Can any plan be simpler or cheaper? There is absolutely no extra wood-work. The cost of ploughing the grooves and of slipping in the glass is scarcely worth estimating. It may be said that the item of a second entire surface of glass is a great consideration. Yes; but it will be exceeded in amount, the second year, by the saving in coal, without placing any estimate upon the ease and success of management. Some one may object that a second surface of glass may too much obstruct the sunlight during the short days of winter. To which I reply, that, whenever the sun does shine, I consider the slightly mitigating effect of the double glass a decided advantage to a house facing south.

If the inner glass become dusty, it is a slight work to slip it out, and wash it. If the outer glass feels the heat less sensibly, and therefore clears itself of snow less readily, the trifling extra work in removing the snow is scarcely worth mentioning as an objection. I know of no other drawback to double-glazing.

And, in favor, we have a saving of from fifty to seventy-five per cent in fuel; we have perfect ease in securing the desired temperature, with much less risk from extreme cold or sudden change; we have more favorable conditions for growth, with less fire-heat, and less fluctuation in temperature and in moisture; we also avoid all drip. So manifest are these advantages, it is a wonder that this protection is so rarely used. Outside coverings of mats and canvas are often seen; but these are nearly as expensive as glass, and they involve continuous and serious labor in rolling and unrolling. They are exposed to heavy snows and to gales; they are also quite perishable. Besides, they bear no comparison with double glass as a protection from cold. Inside curtains, made of some thin, glazed material, are very serviceable and effectual as a protection from cold, involving less labor, and less liability to accidents from gales; yet it must be apparent that even these are by no means comparable with the tight, non-conducting surface of glass, which *confines* the column of air two and a half inches thick. I would, therefore, advise that all houses facing south, which are to be used for winter-growths, should be constructed for double glass. When a roof faces the east or west, the deflection of the sun's rays, by the first and second surfaces of glass, might cause too little sunlight and heat for many plants. Good judgment will determine how far the second surface can be used advantageously for such houses.

W. C. Strong.

IN an article among the "Notes and Gleanings" of the December number, by I. F. H., occurs the following: "It is curious to inquire whether the vegetation which originated the coal contained potassium; and, if so, what became of it." A few words on the subject may not be amiss. It would require a treatise of some length to explain, even approximately, why coal is so deficient in the inorganic salts necessary to vegetable life, and the many causes that have co-operated to produce this result. The following are a few of the principal reasons, stated as briefly as possible:—

1st, *The plants of the coal period were deficient in inorganic constituents during life.*—A natural consequence of their surroundings. The climate was everywhere insular, sub-tropical, and very equable; the atmosphere reeked with mists and miasmata; rains were probably excessive. Here are excellent conditions for rank growth; and the vegetation of the coal-forests was exuberant beyond conception. It consisted largely of enormous cryptogamous plants, rooted in a soil of decayed vegetable matter saturated with water, and often flooded. It is plain that plants of this nature, built up of moisture and gases, would yield very little ashes compared bulk for bulk with the long-lived, wood-producing trees of the present day, that require a *large* supply of material from decomposing rocks for their support.

2d, *Most of the soluble inorganic matter was separated during their conversion into coal.*—Combustion and decay are like processes. With free access of air, their products are carbonic acid and water; but, when the supply of air is imperfect, more or less carbon remains unoxidized. Charcoal-burning is a familiar example. The plants producing our coal all grew in fresh marshes, and *decayed under water*, where very little air reached them: those confined to higher lands yielded by their decay no coal,—only soil and gases. The water surrounding these decaying plants dissolved out most of their alkaline salts and other soluble matters: these were partly absorbed by superincumbent vegetation, and partly swept into the sea by streams.

3d, *The traces of alkalies and soluble matter that may exist in perfected coal are liable to be expelled by after-processes.*—Without taking into account any of the profound and obscure changes whereby soft coals have been converted into anthracite in the earth, the temperature of its combustion in our stoves and furnaces is sufficient to reduce to the elementary state, and volatilize potassium or sodium compounds. The same is true of phosphates.

Whether coal-ashes are of any practical value, or not, depends mainly on the source from whence they are obtained. Pure anthracite-ashes contain nothing available except a little sulphate of lime (gypsum, plaster), for which it is not worth hauling. It is of no value but as an absorbent or diluent of strong manures. But very little coal-ashes is pure. The refuse from a stove or furnace in which the fire is daily kindled with wood is altogether too valuable to be thrown away, not for itself, but for the wood-ashes mixed with it. When we hear of plants growing readily in coal-ashes, this is probably the kind meant.

D. W. B.

WE propose to devote a few pages each month to extracts from "The Field and Garden Vegetables of America," written by Fearing Burr, Esq., and published in 1865 by J. E. Tilton & Co. of Boston. The book being a large and expensive one, it has not, probably, found its way into the hands of many of our subscribers. It is, without doubt, the very best thing of the kind ever published in this country; its author having had a wide experience, and an intimate and thorough knowledge of all the subjects of which he treats. We confidently believe that the extracts will prove interesting and valuable to our numerous readers.

THE SQUASH.—All the varieties are tender annuals, and of tropical origin. They thrive well only in a warm temperature: and the seed should not be sown in spring until all danger from frost is past, and the ground is warm and thoroughly settled; as, aside from the tender nature of the plant, the seed is extremely liable to rot in the ground in continued damp and cold weather.

Any good, well-enriched soil is adapted to the growth of the squash. The hills should be made from eight to ten inches in depth, two feet in diameter, and then filled within three or four inches of the surface with well-digested compost; afterwards adding sufficient fine loam to raise the hill an inch or two above the surrounding level: on this plant twelve or fifteen seeds, covering about three-fourths of an inch deep. Keep the earth about the plants loose and clean; and from time to time remove the surplus vines, leaving the most stocky and vigorous. Three plants are sufficient for a hill,—to which number the hills should ultimately be thinned; making the final thinning when all danger from bugs and other vermin is past. The dwarfs may be planted four feet apart; but the running sorts should not be less than six or eight. The custom of cutting or nipping off the leading shoot of the running varieties is now practised to some extent, with the impression that it both facilitates the formation of fruitful laterals and the early maturing of the fruit. Whether the amount of product is increased by the process is not yet determined.

In giving the following descriptions, no attempt has been made to present them under scientific divisions; but they have been arranged as they are in this country popularly understood:—



Summer Varieties.—*Bush Summer Warty Crookneck.*—Plant dwarfish or bushy in habit, generally about two feet and a half in height or length; fruit largest at the blossom-end, and tapering gradually to a neck, which is solid, and more or less curved; size medium,—average specimens, when suitable for use, measuring about eight inches in length, and three inches in diameter at the

broadest part; the neck is usually about two inches in thickness; color clear, bright yellow; skin very warty, thin, and easily broken by the nail while the fruit is young, and suitable for use; as the season of maturity approaches, the rind gradually becomes firmer, and, when fully ripe, is hard and shell-like; flesh greenish-yellow, dry, and well-flavored; seeds comparatively small, broad in proportion to the length, and of a pale-yellow color. About four hundred are contained in an ounce.

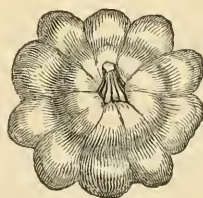
The Bush Summer Crookneck is generally esteemed the finest of the summer varieties, but is used only while young and tender, or when the skin can be easily pierced or broken by the nail. After the fruit hardens, the flesh becomes watery, coarse, strong-flavored, and unfit for table use.

On account of the dwarfish character of the plants, the hills may be made four feet apart. Three plants will be sufficient for a hill.

Early White Bush Scalloped.—This is a sub-variety of the Early Yellow Scalloped. The plant has the same dwarf habit, and the fruit is nearly of the same size and form. The principal distinction between the varieties consists in the difference of color.

By some, the white variety is considered a little inferior in fineness of texture and in flavor to the yellow; though the white is much the more abundant in the markets. Both of the varieties are hardy and productive; and there is but little difference in the season of their maturity.

Early Yellow Bush Scalloped.—Plant dwarf, of rather erect habit, and about two feet and a half in height; leaves large, clear-green; fruit somewhat of a hemispherical form, expanded at the edge, which is deeply and very regularly scalloped. When suitable for use, it measures about five inches in diameter, and three inches in depth; but, when fully matured, the diameter is often ten or twelve inches, and even upwards; color yellow; skin, while young, thin, and easily



pierced; at maturity, hard and shell-like; flesh pale-yellow, tolerably fine-grained, and well-flavored, not, however, quite so dry and sweet as that of the Summer Crookneck; seeds broader in proportion to their length than the seeds of most varieties, and of comparatively small size. Four hundred and twenty-five weigh an ounce.

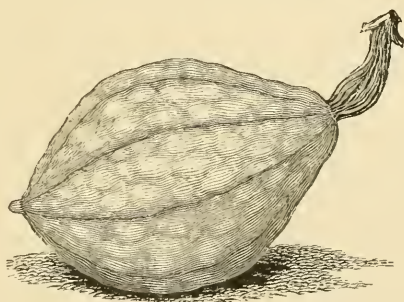
This variety has been common to the gardens of this country for upwards of a century, during which period the form and general character have been very slightly, if at all, changed. When grown in the vicinity of the Bush Summer Crookneck, the surface sometimes exhibits the same wart-like excrescences;

but there is little difficulty in procuring seeds that will prove true to the description above given.

Like the Summer Crookneck, the scalloped squashes are used while young, or in a green state. After the hardening of the skin, or shell, the flesh generally becomes coarse, watery, strong-flavored, and unfit for the table. The hills should be made about four feet apart, and three plants allowed to a hill. Season from the beginning of July to the middle or last of August.

Large Summer Warty Crookneck. — A large variety of the Bush or Dwarf Summer Crookneck. Plant twelve feet and upwards in length, running; fruit of the form of the green striped Bergen, bell-shaped, but of much greater proportions, sometimes attaining a length of nearly two feet; skin clear, bright-yellow, and thickly covered with the prominent, wart-like excrescences peculiar to the varieties; flesh greenish-yellow, and of coarser texture than that of the Dwarf Summer Crookneck. Hardy, and very productive. The hills should be made six feet apart.

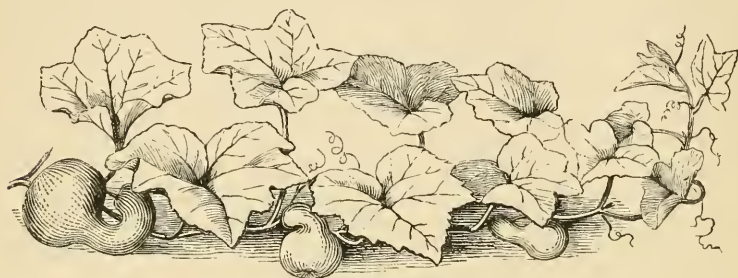
Autumnal Marrow. — Plant twelve feet or more in length, moderately vigorous; fruit ovoid, pointed at the extremities, eight or nine inches in length, and seven inches in diameter; stem very large, fleshy, and contracted a little at its junction with the fruit; the summit or blossom-end often tipped with a small nipple, or wart-like excrescence; skin remarkably thin, easily bruised and broken, cream-yellow at the time of ripening, but changing to red after harvesting, or by



remaining on the plants after full maturity; flesh rich, salmon-yellow, remarkably dry, fine-grained, and, in sweetness and excellence, surpassed by few varieties. The seeds are large, thick, and pure white: the surface, in appearance and to the touch, resembles glove-leather or dressed goatskin. About a hundred are contained in an ounce. In favorable seasons, the Autumnal Marrow Squash will be sufficiently grown for use early in August, and, if kept from cold and dampness, may be preserved till March.

Canada Crookneck. — The plants of this variety are similar in habit to those of the Common Winter Crookneck; but the foliage is smaller, and the growth less luxuriant. In point of size, the Canada Crookneck is the smallest of its class. When the variety is unmixed, the weight seldom exceeds five or six pounds. It is sometimes bottle-formed; but the neck is generally small, solid,

and curved in the form of the Large Winter Crookneck. The seeds are contained at the blossom-end, which expands somewhat abruptly, and is often slightly ribbed; skin of moderate thickness, and easily pierced by the nail; color,



when fully ripened, cream-yellow, but, if long kept, becoming duller and darker; flesh salmon-red, very close-grained, dry, sweet, and fine-flavored; seeds comparatively small, of a grayish or dull white color, with a rough and uneven yellowish-brown border. Three hundred are contained in an ounce.

The Canada is unquestionably the best of the crooknecked sorts. The vines are remarkably hardy and prolific, yielding almost a certain crop both North and South. The variety ripens early; the plants suffer but little from the depredations of bugs or worms; and the fruit, with trifling care, may be preserved throughout the year. It is also quite uniform in quality; being seldom of the coarse, stringy character so common to other varieties of this class.

GRAPES IN CONNECTICUT.—I have about one hundred and twenty-five varieties of native grapes under cultivation, about one-half of which fruited the past season. It must be a very bad location for grapes here, as no variety was entirely free from mildew. The hardiest vines, thus far, are Concord, Hartford, Miles, and Ives. These varieties were nearly free from mildew. I used sulphur on the Iona once, and could see no improvement; and after that I let them all take care of themselves. The rain soon washed off what sulphur I had put on. Rogers's Hybrids, so far as I have tried the different numbers, are not satisfactory. The hardiest with me is No. 1. The fruit is high flavored, but has a rather hard pulp, and ripens rather late. No. 2, fruit rotted. No. 3 is as early as Hartford, and a pretty good grape, but does not improve after it is fairly colored. No. 4 very fair, but so much like 19, that poor judges could not distinguish it. No. 9 very good, distinct in flavor from No. 3. No. 15 rotted badly, and has for three successive seasons; and the vine mildews very badly. This variety is high flavored: but the skin has an astringency that is very disagreeable; and, to my taste, it is the poorest grape of all the numbers. This last quality I find, to some extent, in all the numbers. No. 19 rotted some; but, on the whole, I like it the best of all the Rogers's numbers. The Salem mildewed badly, but has not fruited yet. No. 28 something like 3, but not as good. No. 22 rotted, and other numbers did no better; and, for this locality, I could not recommend any of them. Concord

rotted some. Hartford did well. This fruit may suit most people, and I could not eat them if there were no others ; but, so long as I can get something better, I shall make an effort to do so. The Miles is somewhat better, and, with me, ten days earlier than the Hartford ; quality better ; very hardy. Isabella colored before Hartford. It ripened up well on some of my vines ; while, on others, the fruit ripened very unevenly, and dropped as badly as the Hartford. Some of the berries were very fine, but not quite equal to a good Isabella. I am pleased with the Iona. I had about twenty-five vines of this variety which fruited, and they all did well. I had bunches eight inches long ; and this was the only really good grape of the collection. As bad as the season has been here, the Iona has done well. It mildewed some, but not badly. Concord mildewed as badly this season ; though it was free from this evil last year, when the Iona suffered some. The fruit did not all get ripe until late. I gathered most of it about the 25th of September ; and have some very fine bunches on hand now, in good condition. A portion of the fruit I left on the vines until the 1st of November ; and, notwithstanding they had been frozen hard, they were of excellent flavor. This is the best native grape in this locality. I have something to say of the Adirondack. This variety has done very well : the fruit is excellent. Last season, it did not suffer much from mildew ; but, the year before, it mildewed badly. In September, I called upon J. W. Bailey, at Plattsburg, N.Y. ; and he surprised me with his beautiful show of Adirondacks. If I could get such grapes here, I would give up all other varieties for this. No mildew, no rot ; every leaf stretching itself to its utmost capacity. A glorious sight. The Adirondack ripens at least one week earlier at Plattsburg than with me.

The Delaware seems to be failing in this locality ; though mine did very well, considering the season, which has been remarkably wet all through. Fancher is probably a seedling of Catawba, and very good. Eaton is also good. This last is probably not much known. The fruit is very much like the Catawba, and three weeks earlier. The fruit of the Diana Hamburg is good, but not high flavored. I don't think it will stand this climate. Creveling good, but a shy bearer. The Telegraph is a very good grape ; early, hardy, and a good bearer. Other kinds which fruited have nothing special to recommend them. I have some promising young hybrids, besides a large lot of seedlings not yet fruited. I have a large number of new kinds which have not yet fruited. Some of them ought to be good, judging from what they cost.

William H. Page.

GREENVILLE, CONN., Dec. 5, 1867.

DAYTON HORTICULTURAL SOCIETY. — Under the auspices of an active member of the State Society, the spirit of emulation has been stirred up in the neighborhood of this very lively little Western city.

A society has recently been organized ; and, at its first meeting, Mr. N. Ohmer was elected president ; and at the next he discharged the first function of his office by delivering a very interesting address.

Under the care of such an energetic officer and earnest as well as successful horticulturist as Mr. Ohmer, and with a band of devoted gardeners and fruit-growers, this society is bound to succeed in doing much good.

THE ALTON HORTICULTURAL is a lively society, holding its meetings from house to house every month. A feast of reason is always provided in the shape of a paper or report upon some topic of interest. At the December meeting, they had a report upon the apple-tree bark-louse, which is yet rare in that part of Illinois; and then the following paper on *winter-pruning*:—

“Pruning, according to Dr. Warder and others, is done in summer for fruit, in winter for wood. Summer-pruning, it is stated, promotes fruitfulness, because it threatens life. Hence, however advantageous in one respect, it is injurious in another, and vital in point. Hence we may conclude that all pruning whose design is to shape the tree should be done during the winter, or rather during the season of rest included between the fall of the leaf in autumn and the starting of the sap in spring.

“The doctors disagree on this subject exceedingly. Lindley, speaking for England, says the best time for pruning is usually winter or midsummer. Kenrick would do heavy pruning between the coming-out of frost in spring and the opening of the leaf, moderate pruning in June or July. Downing thinks, that, practically, ‘a fortnight before midsummer is by far the best season, on the whole, for pruning in the Northern or Southern States.’ Cole gives preference to June, July, and August, for moderate pruning, and considers the spring as the worst season. Barry says, that, in Western New York, they prune apples and other hardy fruits as soon as the severe frosts are over, at the end of February and beginning of March. Thomas, in the new edition of his ‘American Fruit Culturist,’ takes almost unqualified ground in favor of winter-pruning.

“Judging from my own experience and observation, as well as from the arguments adduced by these gentlemen, I would say,—

“1. The best time for pruning, looking to the health and vigor of the tree, is during the season of rest; i.e., in late autumn, winter, or early spring.

“2. The colder the climate, and the more tender the tree, the later should pruning be done. In this climate, and in ordinary years, we may prune the apple, and perhaps the pear and quince, during any part of the season of rest; guarding, however, against being so late as to excite ‘bleeding,’ or the oozing-out of the thin new sap from the wounds. The peach, and probably the other stone-fruits, should not be pruned until late winter or early spring. The wound caused by cutting off a limb seems to affect unfavorably, for the time being, the hardihood of a tree; a case analogous, possibly, to the amputation of the limb of an animal.

“3. Summer-pruning may be done advantageously to check luxuriance of growth, and promote fruitfulness; and also from the fact that wounds made in early summer heal more readily. But it should be distinctly understood that this is done at the expense of the vitality and future usefulness of the tree; and that the economical question is, whether we prefer an early, abundant, and brief supply of fruit, or a later, more moderate, and more lasting one.

“4. As to the mode of winter-pruning, there is nothing, perhaps, peculiar, compared with pruning generally; a subject upon which I do not now consider myself at liberty to enter. It may be said, however, that large limbs can be cut off

in winter with much less injury to the tree than in summer; and that, accordingly, winter should be chosen for that purpose."

The president asked, whether the rules and practices applied to fruit-trees was alike applicable to ornamental-trees.

Mr. Jordan would approve of the practice of pruning when the trees were in a state of rest, and would apply the practice to all deciduous trees. To prune evergreens would pinch out the newly-started buds.

Huggins. — Some deciduous trees, such as maples and beeches, he would not prune when there was danger from the flow of sap.

The state of rest was understood to be at any time after the fall of the leaf, and before the sap started in the spring.

Mr. Lyon. — Prunes when convenient, giving young orchards very close attention.

PEAR-GROWING. — Whatever may be said of the failures in pear-growing, it is certainly true that those who have carefully studied the habits and wants of the pear-tree have succeeded; and the inducements now offered for growing pears for market are certainly greater than they were years ago, because the supply to meet the demand is less in proportion, and the price greater. Very much is said about ground having to be prepared after a certain manner; and essay after essay has been written, resulting as most essays do, — viz., in the writer appearing on the stage and glorifying himself for an hour, to be no more heard or thought of. We advise planting pears, either standards or dwarf. If light soil, use standards; if heavy soil, use dwarfs. Give under-drainage to the heavy soil if convenient and within your means, but do not hesitate to plant because it is not under-drained: attend, however, annually and carefully to the surface-drainage. Prune once in November, and again in early July or last of June, as the season is late or early. Do not fear to cut while the tree is young; but, when it gets to making stems of four or more feet in growth, let it be one year without tall-pruning. Use bone-meal, salt, and plaster as a manure annually, and keep the ground well and often stirred two or three inches deep until the time of summer-pinching; then stop all culture until so late in the season that no growth can be started.

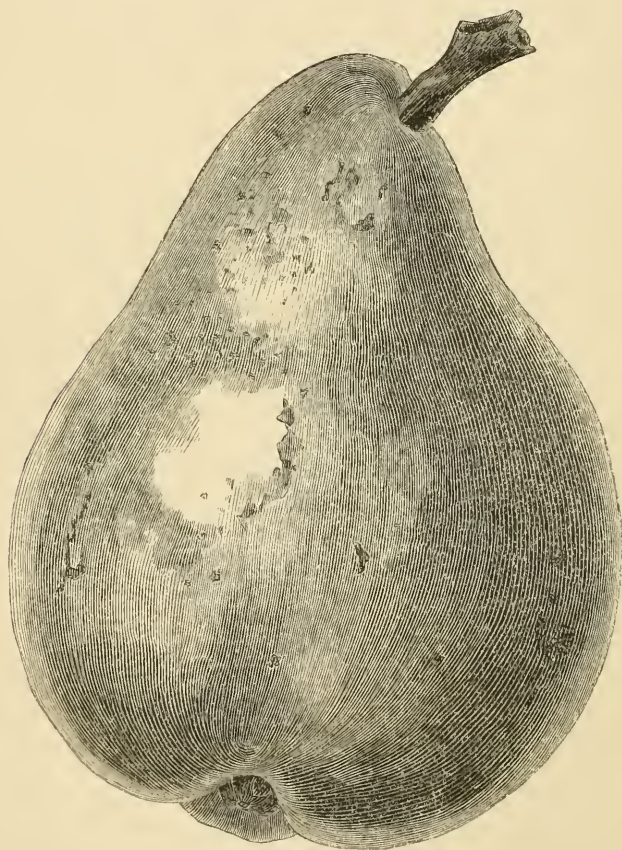
F. R. E.

ERRORS WILL CREEP IN. — A few days since, a friend drew our attention to his bed of grape-cuttings, which he had mulched deeply when planted with tan-bark. On examination, we found many plants almost destroyed by means of fungi-mould; showing that even mulching may be carried to excess. The mulch was about four inches deep, and had not been stirred since it was first applied. Two inches of mulch is sufficient, and then it should be stirred occasionally during the season.

A BARTLETT pear-tree is recorded as having grown four distinct crops of pears the past season. When the first crop, which was of the usual size, was gathered, the fourth crop was in flower, and the two intermediate crops of proportionate ripeness.

HUYSHE'S VICTORIA PEAR.— The subject of our illustration is a new English seedling-pear of great promise. It was raised by Rev. John Huyshe of Clyschydon, near Exeter, England; and has now been before the public for some years.

From the time of its first exhibition, it acquired a popularity which has since been well maintained; and it is probable, that, in England, it will prove one of the best of dessert-pears. Of course, in this country, we cannot speak of its merits as a garden-fruit until tried; but it promises well.



We copy the following description from "The Florist:" "Victoria has been so long under trial in every kind of soil and situation, that its reputation as a hardy and prolific pear is now well established; and these two qualifications, coupled with the equally important one of being an abundant bearer, recommend it not only to the private grower, but to the market-gardener and orchardist. For the latter it is well adapted, on account of its vigorous growth,

and the large dimensions which it acquires. The season, too, at which the fruit is in perfection, when most of the best kinds are passed, is one of its great recommendations.

"The fruit is medium-sized, oval or almost cylindrical, flattened at the ends; skin yellowish, freckled, and veined with russet; eye small and open, set in a shallow depression; stalk very short and thick, inserted without depression on the end of the fruit, and sometimes obliquely inserted, as in *Beurré d'Aremberg*; flesh yellowish, melting, rather gritty at the core, juicy, rich, sugary, and vinous. It is in use during December and January."—*Florist and Pomologist*.

POTATO DISEASE. — We hear less said about the rot among the late potatoes than for several years. At one time, it was feared that the crop in some locations would prove a total failure. It is a fact, that some varieties seem to be more hardy than others. The old *Chenango*, or *Mercer*, that was so popular some years ago, is not planted, because of its tendency to disease. We have seen in past seasons whole fields where not a bushel of sound tubers could be found. Among the varieties that seem to be most hardy at present are the *Early Goodrich* and *Harrison*, two comparatively new sorts. It is a singular fact, that no one has ever been able to give the cause of this disease; but it still remains as great a mystery as the disease known among peach-trees as the yellows, or the cause of the failure of the apple-crop. Though every now and then some person has claimed to have discovered its origin, and invented a specific for its prevention or cure, still, when tested by common-sense people, it is found to be of no practical use. The average yield of this crop is much smaller than before the blast and rot prevailed, mostly because of the blast that usually spreads over the fields before the tubers are grown. We hope to get rid of this disease, and see the potato flourish as in the days of our boyhood.

DRABA VIOLACEA. — A good accession to the ranks of hardy plants has this advantage over the finest of tenderlings, — that every one who cares to do so can indulge in its cultivation. This recommendation attaches to *Draba violacea* ("Bot. Mag.," t. 5,650), — a dwarf suffruticose perennial, whose numerous branches bear a profusion of small obovate-oblong hoary leaves, and are terminated by sub-corymbose heads of deep violet-colored flowers, produced in spring, and which are of unusual beauty for the often obscure and weedy family — that of crucifers — to which the plant belongs. It comes from the lofty Andes, and is found on loose rocks at elevations of from thirteen to fifteen thousand feet; so that it will be a lovely acquisition for rock-work.

YELLOW LOCUST. — This is a valuable tree to grow when the borers do not destroy it. It grows quite rapidly, making firm, solid wood. We believe there are no posts that last so long as the locust. We have used this wood for posts and stakes in the vineyard for some years, with the best success. It can be profitably grown for this purpose where cedar and chestnut are scarce. It is quite easy to grow. The seed can be had at most any of the seed-stores. It bears a beautiful blossom, and is quite ornamental as well as useful.

PURE NATIVE WINES: WHAT AND WHERE ARE THEY?—In the October number of "The Horticulturist," I find a few general comments upon my article under that heading in the September number of the Journal, in which the writer, instead of quoting from my article and refuting my arguments, says that "I take him up quite savagely, showing my sensitiveness on a subject which I well know has caused me to receive a certain amount of censure, as taking a first, however modest or innocent step, in the way of diluting and preparing a good drink which I call wine, and which can be made in any season, and with (very likely he means *of*) almost any grape,—certainly, if correct, a great gain on the old idea, that it required good, ripe, sweet grapes to make good wine." His main objection to my course, "which is an imperfect knowledge of gallizing, is, that it opens the door to other practices, which may not in themselves be as little reprehensible."

Now, in taking up the *argument* again, I should, perhaps, apologize to your readers for speaking so much about myself and my practices; but I will only say here, that when I made known the fact several years since, that the practice of gallizing, or improving the must, or juice, of grapes in poor seasons, was followed here by a number of our vintners, my position in openly avowing a practice in which I could see nothing reprehensible was a solitary one. Others, who had followed it longer and to a greater extent, denounced my foolishness in thus "letting the cat out of the bag," and making an invention common property, from which they had derived the exclusive benefits so far. Others vilified me as an impostor and adulterator, and said I was doing an irreparable injury to the cause of American grape-growing. Another party, again, while they could not deny the good quality of the wines thus produced, said it was unwise to let the people know it, and meet prejudice at once openly and boldly. Thus my position was, at first, an isolated one. I had to experiment and practise *alone*; and those who gallized of my neighbors would not impart any of their practices to me, as they were afraid that I would make them public. Thus I have had to fight almost alone; had to bring the proofs in support of the theory from my own practice; and owe small thanks to anybody in *this country* for assistance. I can, therefore, only speak from my own knowledge. As to the amount of censure I have received, and which the writer mentions, it proves nothing *against* me. I fully expected it. Every one who was bold enough to introduce a reform has had to take it; and no one can combat a deeply-seated prejudice without calling it down upon his head. But I have made this a rule: as long as I have communicated any thing to the public, *never to assert any thing until I had abundance of facts to support it*. I have never recommended any new grape for general cultivation in our locality until I had fruited it for several years, because I did not wish to mislead the public. Thus I did not advocate gallizing until I had fully tried it, and had abundance of good wine, made by that process, to back me up. The wine has been tried, found *good*, by hundreds and thousands; and I think, among other testimony, I may be allowed to quote from "The Horticulturist," September number, 1866, where, among the notices from the "Editor's Table," I find the following:—

"*Native Wines*.—Some weeks since, we received from George Husmann

of Hermann, Mo., a box of samples of wines of his manufacture. We had concluded, after testing samples of American wines that have been sent us for several years past from different sources, that good wine would not be made in this country. The climate, the particular grape, or the requisite skill, seemed wanting to produce a palatable article; but we are happily disappointed in the product of Mr. Husmann's vineyards, some of which will bear most favorable comparison with the best wines of the Rhine, and must meet with favor among those who are good judges of the article. Among the kinds particularly worthy of notice are Norton's Virginia, Herbemont, Delaware, and Catawba."

This is rather strong evidence, quoted from the same journal which now speaks of "a good drink which I call wine." But more: since that time, my wines have taken at least twenty first premiums at fairs; and if those interested in the subject will look over the transactions of the Missouri State Horticultural Society of Mississippi-valley Grape-growers' Association, and many others, they will find them among the first everywhere. At the last meeting of the American Pomological Society, about eighty of the members visited our place, and partook of them freely. Let *them* say how they liked my wines, and whether they caused "that intolerable headache" of which the writer speaks in his former article. "By their fruits shall ye know them." I am willing to be judged after that doctrine, and will let every one taste the *corpus delicti* who wishes to do so. If my opponent intends to be fair, why does he not mention the tests I propose, and which are certainly as stringent as he or any one can desire?

He mistakes, however, if he thinks I have been in a *savage* mood. I am not tender-footed or sensitive on this point, but am always ready and willing to argue it in a fair and honest manner. It is certainly an important question for the wine-makers of this country, and we need all the light we can get upon the subject.

But I will quote a little further from the article in question. The writer says, "He cites us as having made accusations without investigation. We have looked over our article, and failed to find where we have made accusations against any one." Surely a strange oversight, when he compares in that article the wine made by simply adding water and sugar, and thereby *improving* it, to that made of one-third grape-juice, one-third cider, sugar-water, acetate of lime, and oil of rose. This is an accusation against all who follow the practice of gallizing. The first *improves* the wine by simply adding ingredients which are in the must *naturally*, but which are not contained therein in sufficient quantity: the second *adulterates* by adding that which is altogether foreign to the grape. The first is just as *pure* wine (and I dare any one to prove otherwise) as any grape-juice, fermented, can be: the second is a vile mixture, disgracing the name of wine.

Next the writer tries to be facetious. He says, "But if a man is caught with his coat off, and a chill blast comes, he is sure to feel it, and at once turns savagely towards the point from whence it comes; and, even if he knows he can effect nothing, it is natural that he should exhibit his feeling."

I think I can safely leave it to the public to judge *who* "has been caught with

his coat off." It is a sign of a weak cause, generally, when, instead of *arguments* and *proofs*, a writer has recourse to such petty fencing. I have produced my arguments; have also shown my willingness to give proof of the practicality, and proposed the most stringent tests. Why do not my opponents, if they have the good cause so much at heart as they profess, give *their* arguments, and produce *their* proofs? It is an insult to an intelligent public to adhere to this twaddle of adulteration without one single fact in support of their theory. It is easy to condemn; but the majority of our people are too just and enlightened to do so without investigation and proofs.

And do these sage gentlemen really believe that the practice is not followed, to a greater extent even than here, by the wine-makers of Europe? Only since the teachings of Gall, Pitiot, and Chaptal, have become extensively known, and practised everywhere, has wine become so plentiful, and so generally palatable, there. Only through this practice has it become possible to export the wines of *every* season, and to make *drinkable* wine, even if the grapes were not fully ripe. In France, the benefits of this method are openly acknowledged by freeing all sugar used for wine-making from taxation. If the curious will investigate, they will find how much grape-sugar is annually made and used for wine-making in Europe, — an amount which will seem almost incredible to them.

One more point, and my lengthy epistle is at an end. All my opponents seem, purposely or not, to mistake me. I do not assert that I can make *as good* wine in a poor season as in a good one. The peculiarly fine, delicate aroma of a grape in its greatest perfection (which it attains only in the best seasons) must always distinguish the wine of such vintages from those of a poor season. We can produce alcohol by adding sugar, and tone down and dilute the acid, and even the aroma, by adding water; but the exquisite aroma of the best vintages is only at the disposal of a kind and bountiful Providence. The wine-maker can make a *drinkable, even a good wine*, in an indifferent season; but *the best* is in the hands of Him who has rain and sunshine at his command, and who alone is the giver of all good and perfect gifts.

George Husmann.

HERMANN, Nov. 20, 1867.

WINE-GROWING AND WINE-MAKING. — The wine-grower who values his reputation for selling pure wines more than the profits of selling mixed wines will take the way pointed out by Nature to maintain unbroken the nice adjustments of Nature, which fits the composition of the juice of the grape to the wants of man. The grapes are gathered when fully ripe, and the bunches cleansed of all imperfect berries: the fruit is then stripped from the stems, and passed through the grape-mill into the wine-press. The must, or fresh juice, is passed from the press into casks in the cellar for fermentation: these casks are not quite filled; and to prevent the loss of any of the rich flavor, fragrant aroma, and other delicate qualities of the juice of the grape, a tin siphon is fitted closely in the bung, with the other end in a can of water, through which the gas generated during fermentation passes. As soon as fermentation has entirely ceased, the casks are filled with the fermented juice: the bung hole is then securely closed, and the casks are allowed to lie undisturbed until February

or March. The wine is then racked from these casks into fresh casks, when it is ready for the market. This is pure wine, the product of the vineyard in its natural, chemical condition, containing all the absolute nutritive quality of the grape. This is the art of expressing and fermenting the juice of the grape.

The wine-maker who values the profits arising from the sale of mixed wines more than his reputation for selling pure wines will take the way pointed out by Art to increase his profits, — gather his grapes, and handle them the same as the wine-grower until the bulk of the juice is expressed: the pomice is then thrown into sugar and water, and partially fermented; and then it is pressed again. To act understandingly, the wine-maker must ascertain the strength of the must, and know how much sugar the natural ferment or yeast of this must will change to alcohol by the natural process of fermentation; and, if there is not enough sugar, he must add it: if it contains too much acid, he must dilute it with sugar and water; and, if it contains too much tannin and fragrant aroma, he must again dilute it with sugar and water: in all, it will require about one-third sugar and water. The wine-maker, having toned down the harshness in making these additions, places the must, or juice, in casks in the cellar for fermentation. The casks are not quite filled; and a siphon is closely fitted in the bung, with the other end in a can of water, through which the gas passes. When fermentation has entirely ceased, the casks are filled, and the bung-hole securely closed: they are then allowed to lie undisturbed until February or March, when the wine is racked into fresh casks, and is ready for market.

This is the art of wine-making; and it is claimed by the wine-maker that this is pure wine, just as much so as if Nature had given the right proportions. It certainly is no more the product of the vineyard must than of a sugar-plantation. These alterations Nature never designed. It certainly was the prospect of gain which gave birth to this practice.

J. M. McCullough.

CINCINNATI, O., Oct. 21, 1867.

THE WEEPING-CHERRY. — This is a beautiful weeping-tree, but one rather difficult to propagate. For many years, we were not successful in grafting it when we used the wood of the previous year's growth. It was so fine and small, that it often dried up before it could unite with the stock. We then tried larger wood three or four years old, leaving the scion rather long, and an eye or two on each of the side-branches. We were quite successful in this way, both in whip or splice grafting, as well as with cleft-grafting. There is always ready sale for all that can be raised; and we advise nursery-men to grow more of them. The mazzard stock is the best for this purpose; and they should be worked from five to seven feet high. When planted where they can have plenty of room, they generally present a beautiful drooping form.

METHYLATED SPIRITS. — A well-known, reliable writer in "The London Journal of Horticulture" says that spirits of wine — or better, because cheaper, methylated spirits — is better as a wash to destroy the woolly aphid and other insects on fruit-trees than soft-soap, sulphur-wash, or any other compound.

NOTICE OF SOME FLOWERING SHRUBS NEW TO FLORICULTURE. — Prepared from "Descriptions in the Proceedings of the Californian Academy of Natural Science," vol. ii., by JOHN L. RUSSELL.

The fine new species of plants, of all the different sections of phenogamous and cryptogamous alike, brought to light by researches into the botany of California, have rendered the flora of the Western coast of great interest to horticulturists. Through the studies of Dr. Kellogg, of San Francisco, on plants brought to him by collectors and by his own herborizations, we are made acquainted with many exceedingly interesting specimens, described and figured in the magazine quoted above; and the labors of H. N. Bolander have given, to the scientific world, treasures in lichens, mosses, and kindred plants, scarcely conceived of before in our North-American flora. The forest-trees of that State have also passed under his observation; he being, in fact, indefatigable and devoted in his regard to the vegetable productions of the country, and one to whom botany will be greatly indebted for his laborious researches.

The plan of this present paper was simply a passing notice of some facts in the shrubs of California, brief, and of little value perhaps, except as a record of, or reference to, subjects which properly belong to a journal of horticulture and botany.

The fly-honeysuckles are already well known as among our most common as well as most popular hardy shrubs, beautiful alike in their clustered flowers and different-tinted berries. Two new ones are here introduced to us; viz., *Lonicera conjugalis* (Kellogg); nat. ord., Caprifoliaceæ. This shrub belongs to the Xylostems, and is closely allied to the *L. cœrulea* (L.); its flowers dark purple, gibbous at base, on the outside glabrous, deeply bilabiate. The flowers are quite small; the stem erect, branching; branches four-angled; buds sharp and quadrangular, elongated; the leaves short, petioled, obtuse, soft, velvety throughout.

L. intermedia (K.), Xylostem (Jussieu). Resembles *L. involucrata* if seen without the flower, and having a curved, tubular, rather irregular, corolla; deciduous, opposite, elliptical, acuminate leaves; the fruit small; purple, distinct berries.

A new flowering currant is *Ribes balsamifera* (K.), or balsamic currant. Nat. ord., Saxifragaceæ (Gray); Ribesiaceæ (Endlicher).

Glandularly villous and viscid or resinous throughout; leaves sub-reniform, cordate, three to eight lobed, incisely toothed, pale glaucous; flowers bright yellow (appearing with the leaves), in a condensed raceme; fruit round, villous. The entire plant exhales the odor of *Populus balsamifera* (Balm-of-Gilead tree); from which circumstance the specific name was applied.

Lipochate hastata (K.). Nat. ord., Compositæ; sub-tribe Heliantheæ. Stem two to three feet high, branches opposite, striate; leaves opposite, oblong, hastate, triangular, acute, entire, or mucronate-toothed below, rigid coriaceous; flowers orange-color, with five to thirteen rays; disk flat, yellowish; anthers dark brown. The peculiar foliage and terminal golden flowers must render this an interesting shrub, of an order little seen in the suffruticose state.

Ceanothus cordulatus (K.), Rhamnaceæ. A shrub four or five feet high, with erect, flexuous branches, and numerous very short branchlets, small, ovate-cor-

date, entire, reticulate, hirsute leaves on short petioles ; flowers white, in thyrsoid panicles, which are sometimes leafy at base. Near to *C. hirsutus* of Nuttall.

C. Nevadensis (K.). Stem bright green, warted ; leaves ovate, sub-acute, entire, sub-coriaceous ; petioles very slender ; flowers on elongated panicles five to six inches in length, white, small. Found in the Yo-Semite Valley.

These two interesting species are additions to at least a dozen North-western and Californian ones noticed by Torrey and Gray. They can be understood in their general characteristics by our native and rather common species in dry soils, called New-Jersey Tea.

Trixis (P., Br.). Nat. ord., Compositæ ; sub-order, Labiatifloræ (Endlicher). Stem shrubby, with spreading branches and purplish branchlets ; the bark of a light-ashy hue ; leaves sessile, lanceolate and ovate-lanceolate, acuminate, mucronate ; heads few, small, campanulate, in loose, paniculoid corymbs ; flowers yellow ; outer florets expanded ; external ligulæ three-toothed ; central florets erect, often unexpanded ; pistil purplish ; anthers yellow.

Eriogonum arboreum (K.), Onagraceæ. This is a singular and beautiful shrub, found growing on open, sterile rocks and clayey soils, from six hundred to two thousand feet above sea-level. Its stem is woody, erect, six to eight feet high, about three inches diameter ; the branches short ; the twigs scarlet or madder-color ; the leaves linear-lanceolate, entire, undulate, sessile, villous, alternate, small ; the apex glandular, tipped with scarlet ; flowers in dense spikes, with roundish, obovate petals, shorter than the stamens ; diurnal, purplish.

ALTON (ILL.) HORTICULTURAL SOCIETY. — We have received several reports of the meetings of this flourishing society, all showing that our Western friends are wide awake in horticultural matters. We give brief extracts from the reports of some of the special committees of this society, appointed to investigate the subjects reported upon by them.

The Special Committee on Protection of Vines, &c., presented the following report : —

Your committee, to whom was assigned the duty of examining the vineyards in this vicinity, with the special view to observe the effects of cold, and the consequent want of winter-protection, beg leave to report that they have visited several vineyards, and given the subject such attention as was in their power.

We do not feel authorized, from what we saw and heard, to say, that, in this latitude, such protection is generally needed. We have seen excellent growth, foliage, and fruit, both upon protected and unprotected vines ; and do not think, that in a season like this, following such a winter as last winter, any perceptible difference is shown. We are aware, that, since 1854, there have been two seasons when it would have proved highly beneficial to have had our vines laid down and covered, and especially to those who send their grapes to market ; for they would then have had grapes when they were scarce, and the crop would equal in value, perhaps, two ordinary crops. Still further : it is found, that, after such a severe winter as that of 1864, the growth of the vine is generally injured, and it thus entails a loss even to the second year. Whether it will pay our vine-growers to lay down their vines and cover in winter, rather than risk the consequences of

some severe cold snap that may not come at all, is a question that will be answered variously by various men ; depending, of course, somewhat upon the facilities each one has for doing the work when the season comes. We cannot from our limited knowledge of the facts, decide this part of the question.

Respectfully submitted.

JOHN M. PEARSON, }
D. E. BROWN, } *Committee.*
W. C. FLAGG, }

J. Huggins. Chairman of the Committee on Entomology, presented the honey-bee and the following : —

Your Committee on Entomology find before them three specimens of the honey-bee ; to wit, the queen, the drone, and the worker.

Every swarm of bees is composed of three classes ; viz., a queen, drones, and workers.

The queen is the mother of the entire increase of every family of bees, and is longer than either drones or workers, and larger than the worker, but not so large as the drone. The worker-bees are the smallest of the family. They construct the cells, and are the laborers of the family. They gather the honey, and upon their labor and skill depends the prosperity of the colony. The drones are the largest bees of the family, being twice the size of the workers. They have no sting, and may be handled with perfect impunity. They collect no honey, and are never seen to alight on any flowers, or doing any thing to aid the prosperity of the colony. To one not acquainted with the natural history of the honey-bee, these lazy drones appear perfectly useless ; but, should they be banished from our hives, depopulation would speedily follow.

Mr. William E. Smith presented the following Report on Ornithology : —

Mr. President, — Your committee would respectfully report that the prevailing opinions with reference to birds are conflicting, and appear to be peculiarly suggestive on several important points connected with horticulture.

The present season will long be remembered for the excessively long-continued drought, the effects of which have been clearly distinct. A question arose with your committee, in the impression on tree, plant, vine, and fruit, whether the drought has not driven away a large number of birds before the usual time of departure. Our individual experience is, that birds in general have been very scarce this season ; but the experience of the members seems to warrant the assertion, that birds have never been so plenty.

So far as your committee can learn, the swallows left their summer haunts as early as the 20th of August, orioles Sept. 10, blue-birds Sept. 26, the blue-jays Sept. 15, the catbirds Sept. 20 ; while a few birds still remain — jays, catbirds, and robins — to take the later peaches, grapes, and pears. Further particulars on the time of departure of our various birds will be gratefully received by your committee.

The depredations of birds on the peach and grape have been severe ; some estimating the daily injury as high as fifteen dollars a day. As usual, the oriole has been the greatest pest, preying chiefly on the Delaware and Concord. In every locality where fruit has been in near proximity to woods, there has been

considerable damage, varying from total destruction to all degrees of preservation. Your committee have seen rows of Catawba next to forests completely denuded of fruit, while all rows of the vineyard were more or less preyed upon.

Individual experience has shown, that, where peaches and grapes are side by side, the birds prefer the peaches to the grapes. A question arises, whether we may not keep the birds from our finer varieties of fruit by planting what will give them abundant food at less expense. We all wish to keep the birds, provided they will not do us too much harm : that they do us service admits of little doubt. For instance, may we not protect our early cherries by planting by their side the mulberry ?

In all orchards, a large proportion of apples is dropping, many of which are found to be harboring insect eggs. May it not be, in part, that some of our feathered friends have been driven away by the drought, and left us to the mercy of our insect enemies ?

VINE-EXTENSION.—Mr. W. Thomson, in the fifth edition of his “Treatise on Vine-Culture,” recently published, has the following remarks on the extension-system, as it is called, which has lately excited so much interest in the garden-newspapers :—

“Theoretically, it must at once be admitted that the one-vine or extension system stands on vantage-ground. No one can deny that a tree which is largely developed, with its roots ranging over what I may term an extensive pasture-field, is likely to maintain its health and vigor for a much greater length of time than one that is, by the force of circumstances, restricted in its growth. But there are practical difficulties in the way of the general adoption of the former mode of culture. In the first place, all experience goes to prove that the vine is what may be termed a rambling rooter. If the border is not carefully made, and of such materials as to induce the formation of a numerous progeny of fine, branching, fibry roots, the width of an ordinary vine-border will soon be traversed by them. This takes place even when the restrictive system is adopted ; and it takes place with infinitely greater rapidity under the other. To meet this difficulty, the roots have been walled in : but this only aggravates the evil ; for, the moment the roots touch the wall, they descend to the bottom of the border, where they are far from the genial influences of heat and air. Another objection brought against this system is, that one vine takes much longer to furnish a house with fruit than a number do ; but this can be met by planting supernumeraries, to be removed as the permanent one advances. A third objection is, that variety of grapes is desirable in a vinery ; and this cannot be had where only one is grown. Grafting or inarching will meet this objection ; and it is well known that many delicate sorts of vines grow better on other than on their own roots. Thus it appears that the only serious objection to the one-vine system is the difficulty of getting a border of sufficient scope for the roots of a vine of such proportion as will fill a good-sized vinery with fruit-bearing wood ; but, where such can be had, I fully approve of the ‘extension-system.’”—*Florist and Pomologist*.

MULCHING STRAWBERRIES. — In the North, strawberries should be covered to protect them from alternate freezing and thawing. If not done before, it may even be done quite late in winter, as the principal injury is often done in early spring, when the ground freezes up at night, and thaws out in the middle of the day. If the vines are covered before the ground is frozen up in the fall, unless the covering is very light, they are quite likely to be smothered. Better not cover until the ground is frozen up; and perhaps December or January is just as good a time as earlier. If straw or hay is used, it may be put on loosely, about six inches deep; and indeed, if late, and the ground is frozen up solid, it may be put on still deeper; for the deep mulching does no harm so long as the ground is frozen, but only by smothering the plants when they are not frozen. No matter how deep the mulching is between the rows, provided it is left shallow over the crown of the plants. In the spring, the mulching must be raked entirely off the plants, and left between the rows. If sufficiently heavy, it will prevent the growth of all weeds, and keep the ground moist at the time of the ripening of the berries, when, usually, the weather is rather dry, and the berries do not attain their full size for want of moisture. At such times, it is hardly practicable to water, unless it be a very small bed; and, although constant stirring of the ground will prevent the ill effects of drought, it makes the berries dirty. Indeed, one of the objects of mulching is to keep the berries clean. Some cultivators cover very lightly through the winter, and in the spring fill up heavily with mulch between the rows. On high, dry ground, there is not so much danger of winter-killing as on that which is low and wet; and on such dry ground the plants will come out strong in the spring: but, even then, the blossom-buds seem to be stronger for a slight winter-protection. A few days' difference will occur in the time of ripening between those which are left uncovered, or uncovered early, and those which are uncovered late; thus prolonging the season by leaving some covered late.

Sorghum bagasse or refuse and corn-stalks are considered by some as the best material for mulching. Leaves gathered up in the forest make a fine covering; and, if well rotted before applied, the plants will come out as green in the spring as when they were covered. If no other material be at hand, a furrow of soil, thrown upon the row immediately before the freezing-up of the ground, makes a good winter-protection. Some recommend sowing the ground with oats at the time of the last cultivation, say in August. This will grow up, and make a capital winter-protection, with no possibility of smothering the plants. The same result can be attained in most soils by allowing a growth of autumnal weeds.

Of course, in the warmer localities, winter-protection is not necessary; but the mulch will be a benefit during the summer, whether the climate be cold or warm.

MARENGO, ILL.

C. C. Miller.

PEACHES AT THE WEST. — At a recent meeting of the Alton Horticultural Society, Dr. Hull remarked that he had noticed that peaches with the reniform gland, such as Bergen's Yellow, Barnard's Yellow, Columbia Smock, and La-grange, have been unusually fine during the past season, which has been a remarkably dry one; while those with globose glands, with the exception of Old Mixon, have suffered. The large Early York and many others rotted badly.

MARANTAS. — There are no plants which prove more attractive in the hot-house than those to which this notice is devoted.

The family is a large one, and includes many ornamental plants. They are remarkable for the permanency of their leaves ; the foliage being smooth, hard, and polished, and many varieties beautifully variegated with colors, which look as if they were painted in oil, and varnished. It is this glossy beauty which renders



them conspicuous in the hot-house, and enables them to rival plants with softer, less-permanent foliage, but of more brilliant colors.

We well remember the admiration with which we first saw *Maranta alba* and *rubra lineata*, varieties now almost lost in the host of showier kinds which recent explorations have given us.

Maranta Veitchiana, the subject of our cut, is one of the newest and finest "new varieties," and is thus described in "The Florist : " —

"It is a stout, free-growing herb, attaining the height of two feet or upwards ,

its stalked leaves being more than a foot in length. These are ovate-elliptic, with a dark, glossy-green ground: in strong contrast with which occurs a series of large obtuse patches of pale-yellowish or grayish-green, close to the midrib; and these, being closely placed, form an irregularly-defined pale centre. Exterior to these, and about midway to the margin, occurs another series of bold, connected markings, of a lunate or scalloped outline, and of a transparent yellowish-gray, giving the leaf a remarkably pictorial effect, either when seen from above or beneath; for the paler portions, as seen against the light, show themselves to be quite transparent. The under side is of a rich vinous purple, paler where the spotting occurs. The effect of this coloring is very rich; so that the plant is remarkably attractive, especially when it acquires mature size, and has thrown out a spreading head of beautiful leaves."

This plant has been referred by Dr. Hooker to *Calathea*.

It can readily be seen from the description, and the beautiful shading of our cut, how ornamental the plant must be. Yet this is but one of many which are equally beautiful.

An idea of the colors of the plant may be obtained by reference to Curtis's "Botanical Magazine," t. 5335, where a colored illustration is given.

The culture of these plants is very simple. They should be potted in rich sandy loam, with an admixture of peat; be kept at a winter temperature of not less than sixty degrees, which, in summer, may rise to eighty or ninety. They need liberal supplies of water when growing, and should never be very dry.

Propagation is easily effected by division of the root.

MANURE LAWN-TREES. — Nature supplies yearly a renewal of food, by the decay of leaves, to trees growing in the forest; but, on the open lawn, no sooner does a leaf fall than the careful gardener rakes it away. In the space of twenty or thirty years, the decay of leaves in a forest would accumulate a depth of four to eight inches, besides supplying yearly the trees with renewed food; yet many a tree is permitted to grow upon a lawn, year after year, the grass yearly taken away, and not a particle of any manurial food applied to it. How, then, can we be otherwise than occasionally annoyed and grieved if death or disease attack some tree most valued on our lawn? Can we expect them to live, and thrive vigorously, without food? A moment's thought will tell us no reasonable expectation can thus be had. Let us prepare, then, to manure, or, more properly speaking, furnish food requisite to enable our lawn-trees to give us this coming season vigorous growths, and broad, rich, green foliage. Let us get our old leaves and our old barnyard manure, and mingle them together; let us apply some plaster and some bone-meal, and mix the whole again with the fork; and, as soon as the frost is out in spring, we will roll back the turf from around our trees a diameter one-fourth greater than the extent of the branches, and taking off two inches of the top soil, and laying it one side, we will then remove, say three inches of the soil or earth below; then we will put four inches of our compost, and again return our two inches of top soil, and roll back our turf; and the first good rain, if we watch our tree, we shall see it laughing for joy as much as our children do at the gifts of Old Santa Claus.

F. R. E.



THE Editors of "The American Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulturists.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

I. M. S., Hermitite, Mo. — Thank you for your suggestions. We have in view the publication of a series of articles upon the propagation of bedding-plants, and propose to begin in February or March. Such hints as you gave us are very useful, and very much assist us in our great aim, — that of adapting the Journal to the wants of all sections of the country. We should be glad to receive the articles you promise.

D. C., Fairview, Ken., asks the following questions : How shall I keep apple, pear, and quince seed for sowing ? What is the most favorable time for sowing the seed ? Will old seed of the above-named fruits germinate under favorable circumstances ? Is there any evidence that taking scions from the tree when the wood is frozen is a disadvantage to the tree from which they are taken, or that the cuttings are less certain to grow well when grafted than when taken off at other times ? — The best way to keep the seeds referred to is to mix them with tolerably moist sand, and place the vessel containing them in some place secure from mice.

The most favorable time for sowing the seed is just as soon as the ground becomes fit to work well in the spring ; say last of April, or first of May.

Old seed is not so good, though it depends somewhat upon how it has been kept. Should not rely on it.

The only objection we know to taking of scions is the same we have to heading in trees in the fall, — sometimes the ends of the branches cut are injured by the winter, and the terminal bud or fruit-bud below the cut does not start well ; and, if the shoot is large, it does not heal over so well. We are not aware that it would affect the scions for grafting if the wood was well ripened. We know some who regard the fall as the best time to cut scions for grafting, before they have been severely frozen ; just as some prefer to cut grape-cuttings, and bury them in the ground before they have been so exposed.

J. R. B., Bloomfield, Ind. — Are there any varieties of figs and pomegranates that can be successfully cultivated in the open air as far north as the southern part of Indiana ? If so, what are they ? and where can they be had ? — Pomegranates would hardly succeed in the open air. Figs would do well. The former, if set out in summer, and kept in a cellar in winter, would flower well, and set fruit. They would, however, fail to ripen in the open air ; but, if the plants were removed to a greenhouse, the fruit would color about the first of November.

You can procure the following varieties of figs from any of our principal nursery-men, — black, brown, or white Ischia ; brown and white Turkey, Naples, blue Marseilles, golden, large green, Castle Kennedy, long red. All figs do better if laid down in the winter. We have had the best of success with the brown Turkey.

N. H. C., New Haven, Conn. — My Clapp's Favorite pears did not keep well, but seemed inclined to rot at the core. Is this characteristic of the fruit ?

Yes, when left too long on the tree. The fruit should be picked early, and ripened in the house. A good rule is to pick the whole crop soon after the windfalls ripen so as to be eatable.

GREENHOUSE, Skaneateles, N.Y. — You give us no information as to formation of ground, uses for which you need it, size, means at your disposal, or prices of material with you. To tell us simply that you want a greenhouse, and expect us to give you every information, is asking more than we can give.

Z. — Can you tell me where the Italian dwarf peach-trees can be obtained, and the price? — We believe Hoopes Bros., West Chester, Penn., have the trees for sale. We do not know the price.

Should I be likely to be successful in raising some of the smaller growing grapes, like the Delaware, Iona, Allen's Hybrid, and Rebecca, in pots, so that I could carry them into the cellar or move them? — Yes: put them in pots and treat just as you would peach-trees in pots.

If such a plan would promise success, what kinds would you recommend to plant? how large a pot? what method of training? when best to transfer to the cellar, and when to bring them out? would they do better to be put into cellar? and what is the best kind of soil? — Plant any variety you please, avoiding, possibly, the most rampant growers. Pots twelve or fourteen inches in diameter answer very well: some use a larger size. Train spirally, or to a light wire or other trellis, such as is used on which to train climbing greenhouse plants. Transfer to the cellar after the leaves have fallen, and before severe freezing weather. Bring them out after all danger is over of late frosts in the spring. We think there might be an advantage in putting them in the cellar as a protection. We hardly know what would be the *best* soil; but we should advise a mixture such as is used to form a grape-border, using leaf-mould to considerable extent, with some sand.

E. B. A., Ohio, says, "My Logan, Delaware, Isabella, and Catawba grapes have done very well the past year. My Iona vines do not bear; and I fear they never will, as they grow more slowly than any vine I have ever attempted to raise. For this latitude, we have no grape for table-use superior to the old Catawba: *thoroughly ripened, it is a very delicious grape.*"

ORCHARDIST, Illinois. — Will it be better for me to allow my apple-trees to form low, compact, and bushy heads? or to trim them up so that I can easily plough and drive among them? — Adopt the former mode, for several reasons. The trees and fruit suffer less from the sweeping winds when kept low, the fruit can be more easily picked, and the trees are generally more thrifty and healthy.

S. J. C., Washington, D.C. — Do you consider the Doyenné de Comice a desirable variety? — Yes: it has proved so wherever we have heard from it. The only objection that we have ever heard against it is, that the new wood is sometimes rather tender, and is killed by the winter.

A. C., North Adams, Mass. — Can I find a better tree to plant by the roadside than the sugar-maple? — There is no better or cleaner tree for that purpose. The Norway maple is also an admirable tree.

T. G., Boston. — As I intend to plant more pear-trees in the spring, please inform me if the quince stock can safely be used on soil not very heavy. — It will be better to plant standards if your soil is light. Dwarfs prefer a moist, rich soil: with extra care, they will do tolerably well on a rather light soil.

W. P. P., Illinois. — How far apart shall I plant pear-trees in my orchard? and shall I intermix dwarfs and standards in the same rows? — We should recommend planting standard pear-trees about twenty feet apart each way: some plant fifteen by twenty feet. We think it a poor plan to plant dwarfs in the same row with standards. We believe it better to plant dwarfs by themselves, and standards by themselves. We have alternated with standards and dwarfs, but should not do it again. There is a diversity of opinion on this subject among the best orchardists in the vicinity of Boston. We have given information on this subject in the January number of the Journal.

B. T., Home Farm, Io. — I do not see the name of the Montgomery grape described by your Newburgh (N.Y.) correspondent in any of the catalogues at hand. Is there any other name for it? Who has it for sale? — We know no more about it than we have published, except we have seen a photograph of a noble bunch of this grape. Will Dr. Royce have the kindness to answer the questions asked by our correspondent?

A. J. — In planting a hundred standard pear-trees to raise fruit for the market, what varieties shall I plant? and what number of each of the varieties? — It is somewhat difficult to say, without knowing the location, soil, and other facts; but our own experience leads us to give the following list, by adopting which you cannot go far astray, — thirty Bartlett, twenty Beurré d'Anjou, twenty Sheldon, twenty Swan's Orange, ten Lawrence. We give a small list; for we believe more money can be made where but few varieties are planted. If a hundred trees were to be planted for home-use, we should give a list of at least twenty varieties.

PYRUS, Sandwich, Mass. — I was unable to manure my pear-orchard last autumn. Had I better do it now, or wait and plough the manure under in the spring? — We like to manure in the fall, and either spread and plough it in at once, or put it in heaps around the trees, and then, in the spring, spread it, and plough. We should advise you to put it about the trees now, and in the spring treat it as though it had been put on earlier.

MARKET-GARDENER. — From all you know of the Keyes Prolific Tomato, would you advise me to raise that variety next season? I had a few plants last season, but was not very well satisfied with them. — Yes: continue to raise it, and select the earliest and best fruit each year for seed, and you will be pleased with it. There is, perhaps, no better very early tomato; though it is not so early as some declare it to be. It is quite prolific.

J. C., Geneva, N.Y. — Can I plant a strawberry that will pay me better for market-purposes than the Wilson? — No: though not of first quality, it will sell. It is undoubtedly the greatest bearer of them all.

B. T. writes us that the grapes best suited to the latitude and climate of Iowa are Concord, Hartford Prolific, and Catawba.



RASPBERRIES.

I NOTICE your remarks on this fruit, in your article on "The Profitableness of Fruit-culture," in the January number of the Journal ; and if, as is there surmised, many are kept from planting it because of the supposed necessity of "covering the canes in winter," it is certainly time their views were corrected, and that noble fruit placed where it justly belongs, — among the truly hardy fruits of our land. I am very ready to acknowledge, that, like wheat, corn, apples, strawberries, and, in fact, every thing that grows out of the ground, it will "produce the best results " if it has just the right soil, location, protection, and cultivation ; but I also insist, that, in an equal degree with the hardiest of our fruits, the raspberry possesses the vigor and strength to endure our Northern winters.

Here, where the Lawton Blackberry is almost invariably injured, we meet with success in its cultivation : it has become such a favorite, on account of its profitableness, that we permit it to occupy one-half of our ground.

The varieties thus far fruited by us are the Doolittle and Miami Blackcaps, Purple-cane, Kirtland, Philadelphia, Golden-cap, Ohio Ever-bearing, and Catawissa, all of which prove hardy and desirable. The last two are

mainly valuable for their fall crop, which is produced on wood of the same year's growth ; and though this same wood will bear a fair crop the next summer, yet, as we have superior summer varieties, it is better to cut all the wood off close to the ground as soon as frost has killed the fruit, and thus save the strength of the root to grow wood for the next fall's crop.

The fall-bearing raspberries are particularly valuable, as they succeed well nearly all over that large portion of our land where the peach does not ; and, as the fruit matures at a time when rains are frequent, the yield is generally abundant. The color of the Ohio is black, and the Catawissa red ; and though both come at about the same time, yet we would not like to spare either from our collection. The Golden-cap is one of our choicest fruits : the plant is a strong grower, very hardy, fruit good size, a bright golden color, very firm, and peculiarly sweet and juicy. There is a variety, however, that resembles this in appearance both of fruit and bush ; but it is bitter and worthless. Care should be taken to get plants from, or that can be traced to, bearing bushes. Kirtland : a red berry, quite attractive in appearance, pleasant, though not sprightly in flavor ; and though not as heavy a bearer as some, yet it makes up for it in season, being earlier than any of the others. Purple-cane : an old, well-known sort ; bush large, and very vigorous ; a heavy bearer ; fruit red, changing to purple when fully ripe ; excellent flavor, but too soft for long carriage to market. Doolittle Black-cap : also well known ; an excellent family variety, and stands high among market-gardeners. Miami Black-cap is probably without a rival as a family and market berry. The bush is very healthy and vigorous, and perfectly hardy ; fruit larger than the Doolittle, very firm, and possesses a delicious sweetness, that makes it the choice of most persons over any of the other sorts, except, perhaps, the Golden-cap, the flavor of which is equally desirable with many. Philadelphia : this justly-famed variety fruited with us in great perfection the past season : it is perfectly hardy here, and an enormous bearer. During the best week of its season, it will probably yield more fruit than any of the other varieties ; but, as the Miami has a much longer season, it will, I think, produce quite as much fruit. The Philadelphia is inferior in flavor, and, as it is quite soft, will not bear carriage.

We prefer to cultivate in rows five to six feet apart each way, and advocate generous culture both in the use of manure and labor ; though, if the former is difficult to get, the latter, if properly applied, will go far towards

making up the deficiency. Of the varieties named, all but two, the Kirtland and Philadelphia, propagate from the tip ; and, as layering commences the latter part of August, there cannot be much cultivation done after that time. But the tips will be sufficiently rooted to take up a little before time for winter to set in (if not needed for use, they may be heeled in, and kept in perfect condition till spring), the bush shortened in at both top and sides thoroughly, and the spaces between the rows ploughed up with a one-horse plough, *throwing the furrows to the rows, ridging them up as much as possible*, and finishing with a back furrow in the centre. This tends to protect the roots in winter, prevents injury by standing-water, is a support to the canes in spring, and the *best and cheapest mulch* that can possibly be obtained for the plant during fruiting. As the new growth advances, it should be checked at about three feet, which will cause it to branch, and form a strong, sturdy bush, that will support itself without the aid of stakes.

After fruiting, the spaces between the rows should be again ploughed, but the furrows turned *to the centre*, and *away* from the rows : this levels the ground ; and, by using the cultivator both ways afterwards, only a little hand-work around the hill will be necessary. Of course, the ploughing need be done but one way ; and the writer has, by absolute experiment, seen the yield of fruit doubled. If it is not convenient to do the work in fall, it will probably be nearly or quite as beneficial if done in spring, as far as the benefit to be derived from stirring the soil and the mulch is concerned ; and should by all means be done. Aside from this special ploughing, the frequent use of the cultivator during the summer is of the highest importance : in fact, so highly do we esteem it, that we are almost ready to say it is the one thing necessary to success : and we would advise those about planting raspberries to set them in such a way that they can get all around them on every side with a horse, and then *get there* often. Thus do we believe that the raspberry can be produced profitably, abundantly, and universally ; and therefore is valuable in and of itself, and not merely for the purpose of “keeping up a succession of fruit :” and we hope to see the time when it and other fruits, large and small, will be so extensively cultivated as to become the cheapest, as it will be the best, diet for all ; when the poorest man may “put forth his hand, and pluck and eat of what is most emphatically the tree of life” to him and all mankind. *Johnston.*

THE FUCHSIA.

SINCE the first introduction of this flower (*F. coccinea*) from South



America in 1788, its popularity has never once decreased ; and to-day we

have no more elegant plants in our greenhouses than the species and varieties of the fuchsia.

This is due not alone to the beauty of the flower, but to its easy culture, the freedom with which it can be grown, and its floriferous properties. A large fuchsia will probably, in a single summer, give more flowers than any one plant occupying the same space. But not only is the plant adapted for the greenhouse ; it is one of the best we have for parlor-culture : and, with a little care, most varieties may be had in bloom at any season except mid-winter ; and there are even winter-blooming species. For the summer decoration of piazzas it is very useful, requiring only sufficient water to give a profusion of bloom all summer. Supposing it to be early spring, and our stock to be a few young fuchsias just well rooted (such as can be obtained from any florist for from three to five dollars a dozen), let us go with our plants through the season.

They will be in thumb-pots, about three to five inches high, and with from six to eight leaves. Let us remember in the first place that the fuchsia never looks better than when grown as a single stalk, with the axillary branches drooping regularly and gracefully on every side. As soon as the roots touch the sides of the thumb-pots, it is time to repot the plants : for this, use pots from one to two sizes larger (remembering that nothing is ever gained by overpotting), and a compost of rich loam, old well-rotted manure, and a slight admixture of silver sand (house sand, if washed to take out the salt, will do).

Carefully take the young plant from the pot, remove any sour surface-soil, and, being careful not to break the ball, place it in the centre of the new pot ; press the earth firmly around, give a gentle watering, and the work is done.

Tie the plants carefully to slender stakes, and set them in a sunny window. We particularly describe parlor-culture ; but the greenhouse treatment is in all important respects identically the same. Turn the plants every day to prevent their growing towards the light, or an undue development of branches on one side. Water freely ; but never allow water to stand round the roots, to prevent which the pots should always be well drained. After the plants once begin to grow, they should never be allowed to flag for want of water.

In a fortnight, if the day temperature of the room has been about seventy-two degrees, the plants will need a second shift into larger pots; and this repotting should be continued as fast as the roots touch the sides of the pots, until they are in ten or twelve inch pots, which are large enough to bloom them in the house: in the greenhouse, they may be still potted on if desirable. By the first of June, the plants will be about two feet high, with symmetrical side-branches, and may now be allowed to set bloom: previous to this, any buds should have been nipped out as soon as they appeared. The plants will soon be a mass of bloom, and will continue so all summer. As soon as bloom is over, set the pots out of doors to ripen the wood; and, on the approach of frost, store them in a cool frost-proof cellar. They will need little if any water till the season for repotting.

When that time arrives,—which may be from January to April, according to the time when bloom is wanted,—the plants should be taken from the pots, the old soil shaken out, the roots pruned, and the tops trimmed so as to make the plant pyramidal. Place them in gentle heat, water them, and they will soon send out leaves. The pruning should be done by stopping the leading shoots and nipping the laterals, that all may break and grow regularly. The lower branches often refuse to break unless the leader is severely headed in. When the plant is thus growing symmetrically, proceed in culture as in the previous year; only the plants will require larger pots in proportion to their size. Fuchsias are propagated by cuttings for the increase of old varieties, by seed for the production of new.

Cuttings should be the young shoots taken from old plants in early spring: they should be about an inch long, and be rooted in sandy loam or silver sand, with a slight bottom-heat under a bell-glass. In parlor-culture, they may be struck under a tumbler. When well rooted, pot on as before directed.

Many species produce berries very freely. When the fruit is ripe, the seed should be washed out and dried.

In early spring, sow it in shallow pans in sandy loam, and pot on the young plants as cuttings.

As bedding-plants, fuchsias are too apt to run to foliage and give little flower, especially if young plants are used. Old standards, however, sometimes bloom finely, and need only to be planted out in common soil.

The only insects attacking the fuchsia are red spider, green fly, and mealy-bug : the former is kept under by syringing, the fly by smoking, and the bug by washing.

The varieties with a double corolla are very showy, but lack the grace and simplicity of the single.

The white-corollaed varieties were first raised about 1855 : they are very showy, and present elegant contrasts of color, but are generally of weak habit. The following species are well worth growing : *corymbiflora*, *gracilis*, *splendens*, *serratifolia*, and *spectabilis* ; the two latter of which are winter-bloomers.

F. globosa and its varieties are very fine for parlor-culture. *F. speciosa* is a good winter-blooming variety.

Each year gives us so many new varieties, that to give a list of the best is almost an impossibility. The following, however, are fine kinds, which will not disappoint the grower : —

Venus de Medici. — White sepals, purple corolla ; a fine symmetrical grower.

Puritani. — Crimson sepals, white corolla.

Victor Emanuel. — Scarlet corolla, blue sepals.

Rose of Castile. — Violet corolla, white sepals.

Syringiflora. — Small purplish-crimson flowers, in a large erect truss.

Sir Harry. — Crimson.

Prince Imperial. — Dark crimson-purple.

Lucrezia Borgia. — Sepals crimson, corolla violet-purple.

Fantastic. — Double corolla, crimson and purple.

Souvenir de Chiswick. — Crimson and purple.

Cloth-of-Gold and *Acubæfolia* have fine variegated foliage.

Our illustration gives a good idea of the perfection to which the production of new varieties has been carried.

E. S. R., *Jun.*

WHAT PEARS SHALL I PLANT?

THIS question has been asked so often, that we are led to answer it for the benefit of that numerous class of our readers who have not the time or opportunity to test all the varieties in the nursery-man's catalogue, and wish to plant only those that are known to be good. It will be our endeavor to give a list sufficiently large to cover all the time from early to late, so that, from twenty or more trees, one may have the luxury of pears within his reach from July until the next April, and, with the aid of a fruit-house, possibly the year round, if it should be deemed desirable. We give a brief description of each variety that we recommend; for it often happens that though a pear may be very good, yet it might not suit some, and would not be planted by them if they knew the exact flavor of the fruit. It is more than possible that some of our readers may object to some variety we may name in this article, because it may not have succeeded so well in their particular locality as some other pear of the same season which has been tested by them. No list can be given that will be likely to prove the best all over the country from East to West, any more than a list of grapes could be named which would be perfectly well adapted to every State in the Union.

The list we give is one for home-use mostly, though it includes some of the most popular market-varieties. To those who say that the list should be extended to fifty or more varieties, so that the grower may obtain as wide a range of flavors as possible, we make answer, that a novice is as well off with twenty of the best for home-use, or five or six for market-purposes, as he would be with more. The pomologist who wishes to try all, that he may become fully acquainted with their merits, will not be content with one or two hundred sorts, but will possibly number his varieties by thousands. We give a list for standard trees only.

The MADELEINE is one of the very earliest pears, ripening the latter part of July. It is of second-rate quality, but desirable on account of its season; and, for this reason, deserves a place in every collection. The tree is a very vigorous, erect grower, though not very symmetrical in shape. The fruit is rather below medium size, obovate, with a long, slender, curved

stem. It is pale lemon-yellow, with a slight blush on the exposed side, with russet about the stem; smooth skin; melting, juicy, sweet, with a slight perfume. One tree in a garden would be enough for home-use. We find that the children watch eagerly for the ripening of this variety, the earliest we have among a hundred sorts. Good bearer.

DOYENNÉ D'ÉTÉ is an early variety, ripening a little later than the Madeleine. The fruit is small, with a smooth skin; color yellow, with bright-red cheek; short stalk; melting and juicy, sweet, and excellent flavor. A nice little pear, admired by all. One tree of this would be enough; for it cannot be regarded as a good market-fruit. Good bearer.

ROSTIEZER. — This is one of the very best of the early pears. In flavor, it somewhat resembles the Seckel; so that it is called by some the summer Seckel. In size it is small; color unattractive, being a dull-green, with a bronze-like reddish cheek; the stem is long and slender; flesh very sweet, rather coarse, melting, with a very pleasant flavor; good bearer; fruit in clusters. Time of ripening, middle to last of August. Tree naturally a strong but awkward grower, and requires heading-in and careful management to make a good-shaped tree. Well worthy of a place in every orchard or garden.

The BUERRÉ GIFFARD is a favorite pear with many; though, like many of the early pears, it soon decays after being picked. The fruit is rather above medium size, pyriform, resembling the Jargonelle; color greenish-yellow, with a bright-red cheek; melting, juicy, with an excellent vinous flavor. Time, middle of August. This is one of the very good early pears, and deserves a place among good pears.

BRANDYWINE. — This is an American variety, and one of the very best of its season. The fruit is from medium to large, with considerable variation in form, though generally obtuse-pyriform; the skin is of a dull greenish-yellow, with considerable russet, and a reddish cheek; sweet, melting, aromatic flavor, much admired by all who like a sweet pear. Ripe about the first of September. The tree is a vigorous, upright grower, and a good bearer. Good for home-use or market.

CLAPP'S FAVORITE is another American variety, which has been introduced within a few years. It has recently been figured and described in this *Journal*; and we will not take space to repeat the description, but refer

the reader to the December number, page 351. The tree is a very fine grower, bears young, and is very productive. This fruit should be picked, like all the early pears, just as soon as it has reached its full size, and before it has time to ripen on the tree. Season, last of August. The wood and growth resemble the Flemish Beauty, but it holds its leaves even better. We regard it as a very valuable variety for all purposes; and one may plant largely of this with the fullest confidence that the surplus fruit will find a ready sale.

BARTLETT. — This old variety is too well known to need minute description here. We quote the words used in the Journal of last year in regard to this pear: "No pear succeeds better in every variety of soil and location, and no variety gives better crops of good fruit." The tree is a good grower and great bearer; fruit large, yellow, handsome; quality nearly first-rate. This variety should be planted extensively, both for home-use and market-purposes. It has but one fault; and that is its habit of over-bearing. It is the most popular pear in the country, and deservedly so. Season, first to middle of September.

BELLE LUCRATIVE. — This is a most delicious pear, admired by all who like a sweet pear. Though a foreign variety, it does remarkably well here. The fruit is medium to rather large, of a pale greenish-yellow color, with occasionally a faint blush on exposed specimens. The flesh is very juicy, rich, and sweet. Time of ripening, towards the last of September. The tree is a fair grower, and very good bearer. This is not a good market-fruit: on the contrary, good as it is, it is almost impossible to sell it, while very much poorer pears, with bright cheeks and golden sides, sell readily. Every person should plant it for his own use.

ABBOTT. — This is one of the newer pears, but yet a great favorite where known. It is an American variety; having originated in Providence, R.I. The tree is a vigorous, upright grower, hardy, and a good bearer. It is of medium size; yellowish color, considerably streaked and marbled with red; obovate form; flesh white, melting, buttery, with a peculiar *almond* flavor, greatly admired. Time of ripening, last of September. Rather small for market, but an excellent variety for family-use.

PARADISE D'AUTOMNE is a good fall variety. The tree is hardy and moderately vigorous, with twisting, crooked, dark-colored shoots; great bearer.

The fruit is medium to large, irregular in shape, though mostly pyriform; color dark yellow, mostly covered with a bright russet; surface of fruit knobby; flesh fine grain, melting, with a rich, decidedly vinous flavor. Time of ripening, about the first of October. This is a very good acid pear, and should have a place in a list of twenty varieties. Some say it should be extensively cultivated for market; but its acid flavor is an objection to it for that purpose. Those who would admire the Belle Lucrative would not care for this variety for their own eating.

The SWAN'S ORANGE, or ONONDAGA, is another of the acid pears. A fruit-dealer has often declared to us that this variety would not sell; for people preferred a sweet pear to an acid one, on the principle that molasses would catch more flies than vinegar. But still it is a large, noble fruit, and is very attractive in appearance. Tree hardy, vigorous, and productive. melting, and vinous; though, if left on the tree too long, the fruit becomes almost worthless. We recommend this variety, and have planted it quite extensively.

SHELDON. — An American variety of great excellence. The tree is a rapid, upright grower. The fruit is from medium to large size, roundish sometimes; Bergamot shape; skin a dark greenish and russet, inclining to yellow when ripe, with a reddish, bronze-like cheek; flesh, a little coarse, is melting and juicy, with a peculiar and highly-perfumed flavor. Some people object to this variety because it is too high flavored. It is a good bearer, and the fruit is usually very fair. Season, October. In some localities, the tree is a little tender, and the fruit cracks. We regard this as one of the very best sorts to plant.

SECKEL. — This is an old favorite; and though of quite small size, yet no garden or orchard would be complete without this very best of pears. The tree is a slow grower, making stiff, short-jointed wood. This, too, is a fruit of American origin, and is unsurpassed by any variety in the world that we have ever seen. The fruit, when ripe, is of a dull yellow-russet, with a red cheek, small in size; flesh very melting and juicy, rich and sweet, with a remarkable spicy flavor. Season, about the first of October. Though this is a small fruit, yet it often makes up in number what it lacks in size; and, as it brings the very highest price, it pays almost or quite as well as the larger pears. We know several trees of this variety that yield from

forty to sixty dollars' worth yearly. If a man have but two trees, let one of them be the Seckel.

MARIE LOUISE. — This variety is of foreign origin, but yet succeeds well here. The tree is a rather poor grower, though hardy. Fruit is rather large, pyriform, often a little one-sided ; when ripe, of a beautiful yellow, splashed and dotted with russet, sometimes a little reddish color on the exposed specimens. The flesh is yellowish-white, rich, melting, with just enough of the vinous to make it agreeable. Though a little variable, yet it is one of the best of pears. It is a good plan to graft it in the tops of some rapid and upright growing tree ; our experience and observation fully justifying us in recommending this as one of the few kinds that should be planted. Time of ripening, first of October.

URBANISTE is one of the best of pears, though it is a very tardy bearer ; and many persons get entirely out of patience with it, and graft it over with some variety that will bear earlier. The tree is a moderate grower, healthy, hardy, and long-lived. The fruit is from medium to large size, with a smooth, fair skin ; pale yellow when ripe, with a red cheek on exposed specimens ; stout stem, which adheres well to the tree ; flesh yellowish-white, rich, melting, with a peculiarly delicate and pleasant aroma,—some say a slight rose-water flavor ; a very good bearer when it gets age. We have had trees planted twenty years before giving much fruit. Time of ripening, October and first of November. Few varieties will give results so satisfactory in the end as this, and it should be planted extensively for the present and the next generation.

BEURRÉ BOSC is a splendid fruit in every respect. The tree is sometimes a little tender ; and this is the only drawback with this variety. We have cultivated it with success, not having suffered from the evil referred to. The fruit is large and handsome, and of the best quality ; in shape pyriform, with a long, curved stem ; the skin is often smooth, but generally a little rough, and covered with russet, occasionally with a red cheek,—when fully ripe, a rich dark yellow ; flesh melting, rich, and delicious ; ripens in October. The fruit rarely grows in clusters, but singly or in pairs ; and needs no thinning, as it seldom or never sets too much fruit. One of the best, and should have a place everywhere.

BEURRÉ D'ANJOU. — One of the most profitable of pears ; healthy and

vigorous everywhere, on pear or quince. Though of foreign origin, it seems perfectly well adapted to our soil and climate. The fruit is always large, fair, and handsome; color greenish-yellow with considerable russet, with a dull-red cheek on sunny side; surface a little knobby; flesh white, melting, and juicy; vinous flavor, pleasant; texture rather coarse, and somewhat gritty about core. Season, October and November. The foliage of the tree is not large, but peculiar, having a curled-up or diseased appearance. The tree is healthy, vigorous, and productive. The fruit always finds a ready sale. We advise planting largely of this most admirable sort. We have heard enthusiastic orchardists declare, that, if they were to plant a new orchard, they would plant all *Beurré d'Anjou*.

DANA'S HOVEY. — A noted pomologist recently said in our hearing, that a man would need no other fall or winter pear than this. While we can not indorse this remark, we will say that we regard this pear as destined to be as popular as the famous *Seckel*, and nearly or quite as good in quality. The tree makes short-jointed, healthy wood, and bears beautiful glossy foliage, which remains on the tree until the frost comes; quite productive. The pear is rather under medium size, with a rich yellow-russet skin; flesh melting, juicy, sweet, and very high flavored. Time, November; but will keep to January. One of the choicest varieties on the list; fruit fit for the gods. If you have but three trees, let one of them be *Dana's Hovey*.

LAWRENCE. — A fine winter pear, and one that requires but little care to ripen. A general favorite, of American origin; tree healthy, hardy, and sufficiently vigorous; great bearer; fruit medium size, obtuse-pyriform; color, when ripe, a fine lemon-yellow, with occasional russet spots; flesh yellowish-white, melting, sweet, with a rich spicy flavor. One of the best of winter pears. Time of ripening, November to January. Can be planted freely.

VICAR OF WINKFIELD. — For quality merely, this variety will fall far short of those we have before described; but for productiveness, size, &c., it is worthy a place. The tree is a great grower, and generally hardy, though sometimes killed by the blight. The fruit is of large size, pyriform, of a greenish-yellow color, with a reddish cheek; flesh greenish-white, juicy, generally good flavored on exposed specimens; but when the tree is allowed

to over-bear, as it is inclined to do, the fruit is quite insipid. We regard it as an excellent cooking pear ; which, with its other good qualities, renders it a desirable variety. Time of ripening, November and December ; though it is often kept all winter.

This completes our list of twenty varieties, giving a wide range of season, —from the first pear of summer until midwinter, or later, —and an equally wide range in flavor. If we were to plant ten varieties, instead of twenty, we should select Rostiezer, Brandywine, Bartlett, Sheldon, Seckel, Beurré d'Anjou, Urbaniste, Beurré Bosc, Lawrence, and Hovey. If we were to reduce the list still lower, and plant for home-use, we should select, as the best five varieties, Bartlett, Seckel, Beurré d'Anjou, Hovey, and Lawrence.

We have given our opinion of the varieties named quite freely ; but we feel that it is worthy of confidence, because the information has been obtained from actual experience on our own soil.

If fruit-growers differ from us in regard to these pears, we hope they will be free to express their opinion in these columns.

THE DOUBLE-FLOWERING PEACH (*Amygdalus Persica fl. pl.*), AND ITS TREATMENT.

NOT long ago, those who intended to plant flowering shrubs and trees were cautioned against the *double-flowering peach*. I read it in one of the horticultural magazines, perhaps in this Journal ; but it is not worth while to lose any time in searching for the place where it occurs. The reason why the double-flowering peach should be rejected was, "*that such trees would soon become unsightly.*"

As I have all the known varieties of the double-flowering peach and almond in my grounds, I have had ample opportunity of experimenting with them. My experience coincides exactly with that of the author of the article alluded to ; for, under ordinary treatment, such trees become really unsightly : the limbs forming their heads increase in thickness, and make young wood only at their ends ; so that, in the course of a few years, the trees look like other peach-trees not regularly pruned and pinched.

After the first tree I had planted had grown so large that it was impossible to remedy the evil, I, being determined to succeed, pruned and pinched others which were young, severely, but to very little purpose. The trees so treated looked a little better for a few years ; but, as the old wood increased in size, the trees ceased to present a pleasing aspect.

Peach-trees trained on trellises, either in palmetto or any other artificial form, never are bare and unsightly. Remembering this fact, I concluded to apply the method of pruning them to the double-flowering peach, though modified by the object in view, yet adhering to the principle, *not to suffer the formation and increase of old wood after the framework of the tree has been established.*

To restore order, and give shape again to my trees, *I headed them very severely back after they had ceased to blossom in the spring.* I did not hesitate to cut off branches an inch and an inch and a half thick, in order to form the future head of the tree, at which I aimed. Had I done it in the winter, it would have been better ; but I was unwilling to lose the blossoms for a year, even at the risk of killing, or at least injuring, the trees, the appearance of which I did not like any more.

Contrary to my expectation, the stumps of the limbs cut off produced a large number of very vigorous shoots, which were not pinched during the summer, and which gave in the spring following a profusion of beautiful blossoms. As soon as they had faded, or fallen off, *I pruned each shoot back to three buds from the base*, where always some wood-buds are found. In this way the trees retain their shape, and the number of young shoots is doubled every year. Should the heads of the trees grow too dense, they must be thinned out.

The health of the trees has not suffered in the least by this treatment. When they are in bloom, they are exceedingly beautiful and showy.

The varieties in my possession are the following :—

Amygdalus Persica fl. pl.	Amygdalus Persica versicolor fl. pl.
„ „ rosea fl. pl.	„ „ alba fl. pl.
„ „ dianthiflora fl. pl.	„ communis fl. pl.
„ „ camelliæflora fl. pl.	

The *versicolor* is especially remarkable : it bears snowy-white and dark-red flowers, of all shades of color intermediate between dark-red and white.

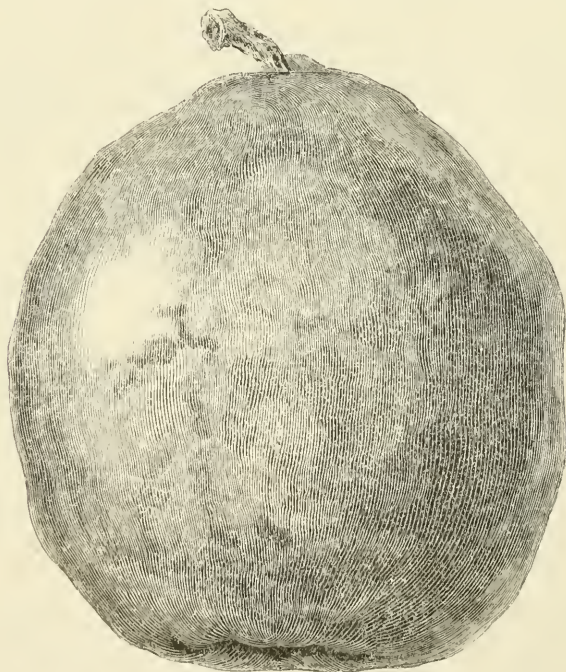
on the same branches. It was introduced by Von Siebold from Japan not many years ago.

It would be very gratifying to me, should I, by this article, induce some amateurs to plant the double-flowering heads, and to treat them as described in the above.

Horticola.

MOUNT-VERNON PEAR.

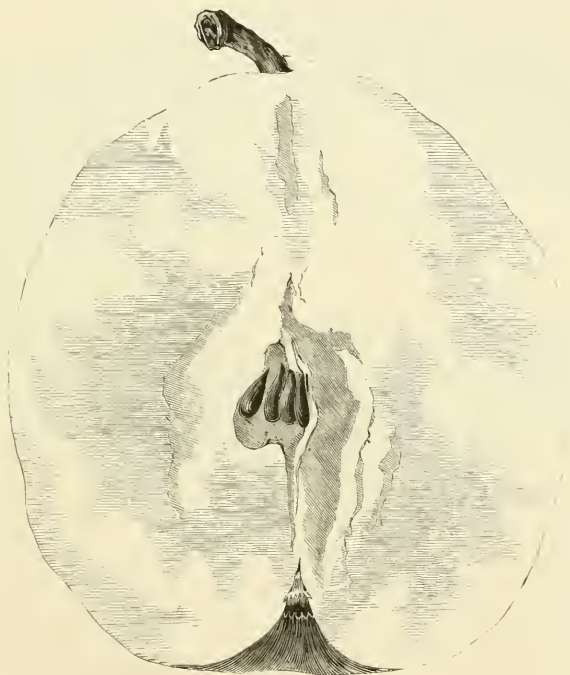
THIS new variety of the pear is a chance seedling, which originated upon the homestead of the late Hon. Samuel Walker, at Roxbury, Mass., about



the year 1847. The tree came up in such close proximity to a one-story building as to be nearly denuded of branches, and completely so on the northerly side to the height of about ten feet: but its vigorous habit of

growth has overcome this impediment to its proper development ; and it has made a strong and symmetrical growth above the point of obstruction, and produces annually a generous crop of fruit, notwithstanding it has been neglected.

The tree first exhibited its fruit in sufficient quantity to permit of its distribution for trial in 1860, in which year Mr. Walker presented specimens of the fruit to a number of his personal friends for their examination. Among those to whom the fruit was at that time sent were the late Dr.



W. D. Brincklé and Thomas Meehan, Esq., of Philadelphia, both of whom agreed at that time in considering it "probably the best pear of the season."

One of the marked characteristics of this new variety of the pear is the novel strain of flavor which it possesses ; and a collection of the more distinct and desirable kinds of the pear would be very incomplete unless it comprised the Mount-Vernon.

The tree is symmetrical in its habit, and sufficiently vigorous in growth

to insure its annual fertility ; and the fruit has the desirable quality of clinging so tenaciously to the tree as to withstand our autumnal gales. The fruit is, in size, large to above medium ; form obovate, inclining to pyriform, but somewhat irregular and knobby ; color a dark-yellow russet, with a red cheek on exposed specimens ; stem short, thick, set on one side in a slight depression ; calyx open in shallow basin ; flesh of a peculiar greenish-white, rather coarse, melting, with a rich and peculiarly spiced vinous flavor ; quality good ; a very desirable variety on account of its peculiar flavor. Its season of maturity is from the middle of November to the middle or latter part of December.

We have tested this fruit year after year since it first fruited, and we do not hesitate to recommend it for amateur cultivation certainly ; and time may show it to be valuable for market-purposes.

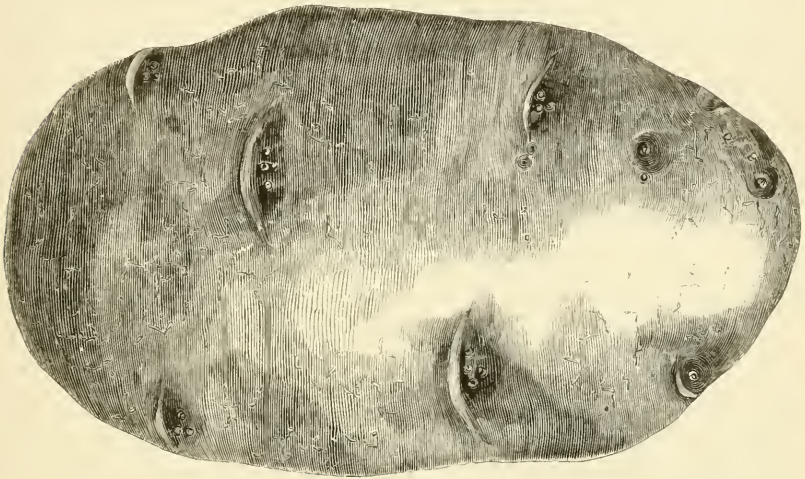
ROGERS'S NO. 41.

WE have repeatedly tested this fine-looking black grape, grown in different locations and under widely different circumstances ; and we are of the opinion that it is the very best of the black varieties that have been sent out by Mr. Rogers. The berry as well as the bunch is quite large, and very handsome, resembling No. 19 ; though it is a better grape, not equal in size to No. 4. It is a good grower, ripens its wood well, and is quite hardy. It has never been seriously affected by mildew of the leaf, or rot among the fruit. It is a long-keeping variety, retaining its flavor for several months. This is true of most of the Rogers grapes, and of all grapes having a thick skin : and it is a valuable quality ; for if all grapes were like the Concord, which soon loses its flavor, it would be little use to attempt to keep them. It is a strong grower, and does not like the severe style of pruning adopted by some. It should be allowed to make considerable wood, and then it will produce fruit in abundance. If any of our readers have had experience with this variety, let us hear from them.

EARLY ROSE POTATO.

THE Early Rose is a seedling of the Garnet Chili, that originated with Albert Bresee, Esq., in 1861.

The stalk is stout, erect, of medium height ; the tuber is quite smooth, nearly cylindrical, varying to flattish, largest at the centre, tapering gradu-



ally towards each end ; eyes shallow, sharp, and strongly marked ; skin thin, tough, of a dull rose-color ; flesh white, solid, brittle, and rarely hollow ; boils through quickly ; is very mealy, firm ; abundance of starch, and of the best quality for the table. It is as healthy and productive as the Early Goodrich, matures about ten days earlier, and is its superior for the table.

I consider it the most promising very early potato with which I am acquainted, and I have tried nearly all the early sorts of the country.

Though I have nearly the whole stock of this potato, having disposed of a few only, I shall have none to spare until next fall.

D. S. Heffron.

EFFECTS OF CLIMATE AND SOIL ON THE ROOTS OF TREES.

IF we go into the forests of New England or New York, we find the ground covered with a network of roots, pushing themselves above the surface. When this forest is cleared of the timber and brushwood, it is a tedious process to cover the newly-sown grain. The roots that reticulate the entire surface prevent the harrow from stirring the soil, and repeated harrowings are required to accomplish the object ; and, even then, the work is but imperfectly done. To plant orchard-trees under this condition of things is simply absurd. We must wait patiently for the forest-roots to decay, so that the surface-soil can be broken up, and something like culture attained.

The roots of the deciduous trees give way in three or four years ; the hemlocks follow ; but the pines must be grubbed out.

In the Western forests, the case is different : the roots strike deep into the soil, and are not seen along the surface : each tree stands like a post, and the plough can run close to it. Wherever you can drive a team between the trees, the plough can follow, as in an old field. On the timbered portions of this State, the forest is usually cleared off in winter ; the trunks of the trees cut into cord-wood, rails, posts, hewed timber, or railroad ties ; the brush piled into large heaps, and burned. The ground is then ready for the plough ; and, whatever crop is planted or sown, the plough is used to prepare the soil. The extensive orchards, vineyards, and plantations of small fruits in the south part of this State, and along the Upper Mississippi and Missouri Rivers, occupy lands that have been thus carved out of the primeval forest.

But there are skirts of the forest, or rather copses of brushwood, among which are mingled oak, hickory, and aspen, through which the prairie-fires annually sweep, often destroying the trunks and branches, and leaving the roots uninjured : these have surface-roots, or points of sprouting, and are called grubs, or grub-land, and must be treated like the Eastern forests ; that is, the brush cut in midsummer, and burned, so as to kill the roots, and then await the slow process of decay. When the fire is kept out of this grub-land, it soon assumes all the appearance and characteristics of the old forests. We have thousands of acres of this new forest-growth, thirty to forty years old, in the north part of the State.

The forests of Michigan, Northern Wisconsin, and Minnesota, are similar to those of New England; though the roots are generally less exposed on the surface.

Out of this difference of the forest-growth of the two sections, we have a lesson of practical utility; and inattention to these apparently accidental phenomena has caused us much disappointment, and loss of labor.

While our remarks are general, and will apply equally to agriculture as to horticulture, yet, to the horticulturist of the West, it is a matter of paramount importance. As yet, little advantage has been taken of the lesson taught by Nature; but, in the onward progress of new ideas, it will be put to general use.

Were we to plant a new forest in New England, to crown its hills with arborescent growth, to belt its fields with stately trees, the roots would take on the same habits as they did when the Indian had right of eminent domain. The roots would again thrust themselves above the surface, and the same labor would be required to subdue it to culture.

If we plant a forest on the prairie, the roots will have the same downward tendency of those of the native forest, and may be treated in the same manner.

If we look at the general form of the forest-trees of both sections, we find them alike. They have the same general appearance individually; though, from difference in varieties, the aspect of the woodland is changed. There the pine, beech, hemlock, maple, elm, oak, basswood, and birch are mingled; while here the oak predominates, with maple, basswood, elm, and black walnut in the bottom-lands, and hickory, poplar, and beech (in some locations) on the upland: along the streams, red cedar and stunted pines; and, in the swamps or bayous of the south part of the State, groves of towering cypress.

In New England, if we plant an orchard, we find the roots following the habit of the forest-tree, and pushing themselves along the surface. If we run the plough close to the tree, we damage the roots: nor can we trench, plough, or subsoil the ground after the tree has sent its roots through the soil; for they are so near the surface, that they would be ruptured in the process.

The snow-covering protects the roots in winter; and the moist, maritime-

like climate wards off the effects of drought in summer. This is the natural, or rather was the natural, condition of things ; but, since so much of the woodland has been cut away, the climate has become changed ; and often during the winters the ground is exposed to the frost when in a dry condition, and the long summer droughts also injure the roots that lie so near the surface : and to these causes we may attribute the short lives of the orchards that have been planted since this new condition of things. I might add one other cause ; and that is the too high culture of the trees in the nursery.

Tile-draining in New England is of great value to the orchard, as it deepens the soil, lowers the level of stagnant water in spring and autumn, and, to some extent, induces the roots of the trees to run more below the surface. As we cannot plough the orchard deep, we must resort to shallow culture, such as the cultivator will accomplish. If we would keep the orchard cultivated, it must be done on the flat system, and the surface only must be stirred. Under such a condition of things, we need not be surprised at the seeding-down of orchards to pasture or meadow, and of the necessity of heavy top-dressings of artificial or natural manures.

To trench-plough the heavy clays of New England is not desirable, for the subsoil contains little of the elements of plant-growth ; and to mix it with the soil has an injurious effect. On the other hand, deep tillage by subsoiling and tile-drainage is of great benefit by allowing the surface-water to pass off through the subsoil. If we plough in lands, say of the width of orchard-rows, twenty-four feet, turning the furrow constantly towards the row of trees, we shall expose the subsoil and the roots of the trees, and thus injure the tree and deteriorate the soil ; and we are compelled to fall back on flat culture, shallow ploughing, surface-manuring, and tile-draining.

The New-England orchardist who removes to the West, very naturally continues the same practice, and, not succeeding according to his anticipations, lays the blame to the climate or to the soil.

The soil of the prairie, and also much if not all of the timber-land, is composed of drift, — soil deposited by the ocean, or of vast fresh-water lakes. What is called the Basin of Upper Egypt in this State is the bed of a large fresh-water lake, into which the Missouri poured its floods of muddy water,

which, being deposited, has made a deep, rich soil. The extension of the Ozark Range eastward formed its southern rim, which, in the course of time, was cut through by the erosion of the water that poured over its rocky ledge like Niagara, and the bed of the lake left was dry for culture. Similar action took place over the vast prairie while submerged ; and the ocean-currents, being constant in one direction for long periods, deposited a homogeneous drift of great depth, — to the north a heavy clay, and over the coal-fields a more friable clay-loam. The roots of the grasses and other herbage has filled the surface-soil with vegetable mould (*humus*), and, to some extent, changed its mechanical texture ; but the subsoil containing the same natural element is also valuable, and suited to the growth of plants, and especially the roots of trees. In such a soil, trees may be broken off by the wind ; but they are never *turned up by the roots*, as we see at the East. If it were not for this downward tendency of root-growth in this soil, no trees could withstand the long summer drought to which they are often exposed. This will explain the loss of newly-set trees after they have made a promising start in the early part of the season. The new roots have not had time to penetrate deep into the moist subsoil, and the trees must die for the want of moisture. In such case, timely mulching would have saved them. The months of August and September are the most trying to newly-set trees.

This prairie-soil holds water like a sponge ; and, in long-continued seasons of rain, the roots are damaged by stagnant water. “ Put in tile-drain,” says our Eastern friend : “ that is our panacea for this evil.” All very well : but we have neither the tile, the labor, nor the capital, to spare for the purpose ; and we must take advantage of such adventitious circumstances as Nature has thrown in our way.

CHAMPAIGN, ILL.

M. L. Dunlap.

(To be continued.)

PROPAGATION OF GRAPE-VINES FROM GREEN WOOD.

IN former times it was customary to increase the number of our grape-vines by the use of cuttings, and by layers of canes of the last year's growth. The cuttings were made long: they were set out in the spring, and cultivated one or two years before they were taken up for sale or for transplanting. Many vineyards were made by setting these cuttings at once in the stations of the future vines. All this was very well for those who had plenty of wood, and who were willing to wait until the fourth year for a crop of grapes; and the plan answered for the increase of varieties that grew readily from cuttings in the open ground, especially where these could be procured in abundance at from one to three dollars a thousand.

It was soon discovered that some varieties would not strike root readily under these circumstances: they were found hard to propagate from cuttings; and such were multiplied by layering the canes in the soil adjacent to the mother-plants. This, however, is not a very rapid nor cheap mode of propagation, and the number of layered plants must necessarily be limited.

Layers were also made during the summer by bending down the young shoots, and burying them in the ground so as to have them rooted before fall.

Many propagators commenced economizing their wood, and increasing the number of vines, by reducing the length of their cuttings to one-half, so as to have but two or three buds upon each piece: and in good soils their success was remarkable, not only in the greater proportion of living plants, but also in the production of better roots, and more salable plants at an earlier period; that is, at one year old.

All these methods were not sufficient to supply the extraordinary demand for grape-vines, especially of the newer kinds that were rapidly introduced: and other means of propagation had to be resorted to, which required greater outlay of capital in glass houses, with artificial heat, flue-pipes, hot-water tubes, sand-beds, potting, watering, shading, training, and generally, also, transplanting into the open ground, watering, mulching, shading, and cultivation. If not so transplanted, the vines had to be shifted into larger

pots, and needed constant attention during the whole season of their growth in the glass houses. By these means, however, an increased amount of wood was produced ; and this being sheltered from the weather, and under the perfect control of the cultivator, was thus protected from mildew and from frost ; and the season of growth was extended for one or two months.

Under these circumstances, so favorable to vegetation, the length of the cuttings was reduced to the minimum ; single eyes, or buds only, were used ; the propagation was commenced very early in the season ; and the young vines were well advanced by the time the open ground and out-door air were ready to receive them. Many of them would produce a growth of laterals ; and the skilful propagator, possessed of proper appliances, was unwilling to waste the trimmings, but used these laterals, or soft-wood cuttings, for propagating a new crop of vines, and often with the happiest results.

Now, it has unfortunately happened, that in the introduction of new varieties of grapes, and in their exceedingly wide diffusion through the country, we have overlooked two very important elements of success in our extreme haste to forward the extension of grape-culture. First of these is the necessity for selecting *varieties that are perfectly healthy in wood, leaf, and fruit*, as well as hardy and productive : the second is the *proper adaptation of soil and climate* to the production and development of the grape-vine and its luscious fruit. Both of these can only be learned by long-continued and close observation, which we have not had the patience to apply. *Festina Lente* is not a very favorite maxim with Young America ; and it has certainly not been the ruling custom of grape-planters in most parts of the country within the last decade, where every one has seemed to strive for the most rapid possible extension of this branch of culture that was attainable ; and thousands of vines, of varieties that had not been fully tested as to the requisites above indicated, have been planted upon hundreds of acres of unsuitable soil, and in situations where the climatic conditions were illy adapted or wholly unfit for successful viticulture.

To these causes, and to the ignorance of the management of the plants, which is necessarily incident to the introduction of a new branch of business, may fairly be attributed the want of success that has attended so many plantations. So also we may explain the frequent maledictions that have

been heaped upon the heads of the nursery-men, who are blamed for their errors of propagation, and scolded for this over-propagation of their plants, "thus exhausting their vitality:" they are blamed for growing vines "by steam;" for using slender, feeble, and immature wood; for making green-wood layers; and (most unpardonable sin!) for making green-wood cuttings root, and develop into vines, in their extreme anxiety to serve the public by supplying the unprecedented demand that exists for more and cheaper grape-vines.

Now, with all necessary deference to this abundantly-expressed public sentiment, which salutes our ears at almost every meeting of the several societies established for the advancement of this interesting branch of horticulture, let us listen to the remarks of those who have carefully studied the subject with the lights of practical observation, supported by thorough scientific knowledge of the laws of vegetable physiology. Such teachers inform us that these objections are "all bosh and nonsense;" and when the demurrers are asked what they mean by their favorite expressions, "over-production" and "exhausted vitality," they can only answer by silence: whereas the highest horticultural authorities inform us that it matters absolutely nothing how the plant may have been produced, if it be fully developed and perfectly ripened in all its parts. If it have good, firm, well-matured wood, with plump and perfect buds, if its roots be sufficiently ripened to withstand the exposure incident to transportation, such a vine is all that we require to set out in our plantations.

Such objectors and cavillers, especially those who denounce plants that have been grown from pieces of soft or green wood, should have been at the Sandusky meeting of the Ohio Horticultural Society in December. There they could have had an opportunity of inspecting some vines that measured respectively twenty and thirty feet in length, from the tip of their shoots to the tips of their roots; strong, firm, and well ripened in all their parts. They were produced by Mr. George W. Campbell of Delaware, O., a very intelligent and successful propagator and vine-cultivator, and also a most acceptable contributor to these pages. They were brought to this meeting for the express purpose of disproving the fallacies in regard to grape-propagation to which reference has been made in this article.

The history of these vines is briefly this: Mr. Campbell had received

for testing a small portion of wood of a supposed new variety of grape : this was cut into single eyes, and started in the usual way in the spring. When the young plants had reached some six inches in height, they were cut back, and the tips were used as green-wood cuttings of the softest and greenest : these were then struck in sand, and carefully nurtured, with a view of increasing the variety as extensively as possible. Of course, they were well cared for ; and, to enable them to produce as much wood as possible, they were set in a border, and kept under glass during the whole season. They were encouraged to the utmost.

The result of such treatment was the remarkable vines exhibited, which, for excellence in every particular, were certainly all that the most fastidious vine-planter could desire. Here there was no room for cavilling : no one who inspected the specimens could discover the injurious effects of the steam propagation of the green-wood cuttings, nor the debilitating influence of the artificial climate produced by the glass structure in which they were sheltered from the inclemency of a changeable out-door climate. They were perfect vines. *

L A W N S.

THE lawn should receive some dressing or protection, if possible, in the winter, if the grass has been closely cut from it until late in the autumn. It is natural for the grass-roots to have some protection ; for we find that grass, when left to itself, furnishes its own protection for winter. Some persons are in the habit of allowing the last growth to remain on to cover the roots through the winter, and in spring, just before the grass starts, burn over the surface to rid it of the old "fog," that would otherwise be in the way. We should consider it unwise to treat our mowing-fields as many treat their lawns. The best protection is horse-manure, spread over the surface liberally, that can be nicely raked off in the spring. It sometimes happens that small stones are scattered among the manure, and, if left, will be greatly in the way of mowing the lawn the next season ; and they should be carefully gathered up. In addition to the manure, ashes or guano can be used to advantage in the spring.

MORRISON'S RED APPLE.

THIS beautiful variety originated on the "Fisher Farm" in Medfield, Mass. Though it has been before the public for several years, yet it has not received the notice it deserves. Though it may not be of the very finest quality, yet its beauty will sell it at any time in any market ; and this is an item, all other things considered, of great importance to the producer. We know of few varieties, if any, whose fruit is more attractive than this. Fruit medium size, conical, somewhat angular ; color light yellow on shady



side and about the eye, but striped and marbled with red ; exposed specimens nearly all red, with russet specks or dots, and russet about the stem and calyx ; calyx closed in a moderately deep basin, sometimes plaited slightly ; segments partially reflex ; stem short and small, set in a regular cavity of moderate depth ; flesh white, fine-grained, tender, with a peculiar and very pleasant sub-acid flavor ; core rather large, and filled with large dark-brown seeds. Season, November to March or April. Keeps well. Tree a good grower, and very productive. This apple, for beauty, will rank

among the winter fruit very much as the Williams does among the summer apples ; though the color of the former is not quite so brilliant as that of the latter.

From all the information we have been able to gather concerning it from those who have grown it, we are led to regard it as an acquisition to our already over-burdened list of apples.

FORCING STRAWBERRIES.

CONSIDER the following reasons why the strawberry should receive more attention as a fruit for forcing. It is the earliest of fruits in the open air, and consequently requires the least possible time in maturing its crop under glass. The cost of the crop is thereby greatly lessened ; and, what is of at least equal importance, the fruit is in advance of every thing else, ripening in March and April, at a time when most wanted, and when it commands the highest price in the market. The space required for the plants is very small, and the cost for suitable houses and for fuel is correspondingly small. Very frequently, the plants may occupy space in houses that would otherwise be vacant and useless. Another advantage is in the short time required in preparation of the plants ; much less than with any other fruit, and scarcely extending over more than the previous months of August and September. Again : the quality, color, fragrance, and *size* of the fruit are eminently fitting for such delicacies. The advantage in size is emphasized, because it is important. A dozen berries would be more of an ornament to a fruit-dish than a single peach, both costing about the same amount. The berries can be distributed with a seeming liberality, and yet at less cost than larger fruits. In view of these facts, we may expect to see this fruit more abundantly supplied in our markets. When the few and simple conditions of successful culture are generally understood, I cannot doubt that the fruit can be produced at a cost which will insure a liberal profit to the producer, and a much larger use by the public.

The cardinal condition for all winter-work, either in fruits or flowers, is

summer growth. The embryo, the latent vigor, must have been accumulated and stored up by previous treatment. To a great degree, we must make the winter-process the unfolding and developing of that which has been garnered during the summer. In some bulbs a sufficiency of nutrition is stored up, so that nothing more than heat and moisture is wanting for their perfect development. And with other plants this is true to a degree not generally realized. A strong and healthy plant can be forced and give a good crop under very unfavorable circumstances, though it perish in the effort. Contrariwise, a weak plant cannot be made to give a good crop under the best treatment; yet it may thereby recover its strength. It is of prime importance to recognize and act upon this foundation-rule, and be thankful for the wise economy of Nature, which enables us, during the liberal warmth and sunlight of summer, to store up strength from which we can freely draw during the short, cold days of winter. It is because this law has been disregarded that so many disappointments have resulted in forcing the strawberry.

It is absolutely essential to a large and satisfactory crop that the fruit be all in embryo in November. In order to this, we must have large and fat crowns, full almost to bursting, yet firm and solid with well-ripened sap. Of course, this involves health and strength of root,—a vigor of constitution in the plant which is secured only by the best previous culture.

Unquestionably the best way to obtain strong plants is by layering the first runners into thumb-pots early in July. Doubtless the first rooted young plants may be taken off and potted, and placed at once in a close frame, and an early and good start be thus obtained with less trouble than by pots in the field. Yet the latter is the *sure* way to get an *early* and *vigorous start*. Early cuttings placed upon a gentle bottom-heat would secure the same result. This first step in the process deserves special care. If not well and successfully done in good season, abandon the attempt before more time is wasted and disappointment follows.

In ordinary seasons, the young plants should be well established by the first of August. The soil for potting should be a strong pasture-loam, the sod being well rotted with an addition of one-third of stable-manure. If this material were previously composted for two or three months, the manure being then fresh, a better mixture would be obtained.

The first "shift" is into three-inch pots ; a small size, but one that encourages the young roots to seek the sides of the pot immediately. A cold frame will secure a uniform temperature, and protect from excessive rain. Water moderately, and keep the frame somewhat close, in order to induce rapid growth. As soon as the roots become numerous, and before being in the least bound, shift into a five-inch pot, packing the compost quite firmly. Increase the amount of water as the plants become vigorous, and give more air. The next and final shift is into an eight-inch pot, provided the previous growth has been sufficiently vigorous. It is for the purpose of inducing this vigor that these frequent shiftings are recommended. The soil being dry when used, pack firmly, and give good drainage at the last. By the first of October, the final pot should be well filled with roots, and the ripening process commenced ; giving free air, and gradually withholding water. It is a fine sight, equal to floral beauty, to see such plump, healthy, rich green plants as may so easily, and with so much certainty, be obtained. The plants may now be left to strengthen and mature, with the trifling care of an occasional watering and the protection of mats when frosty nights come on. Again : remember that all addition of strength gained at this time is so much force in reserve. Yet the plants are by no means to be excited into growth and the premature development of their blossom after having filled their last pot. They must be exposed to the frosts about the 10th to the 20th of November, allowing them to be thoroughly checked, and vegetation perfectly suspended. Without doubt, a crop can be obtained by bringing the plants into blossom and growth without the check of frosts and subsequent rest ; but it will be a much less satisfactory crop : and judging from past results, as well as from our knowledge of Nature's laws, the course cannot be recommended. The check of frosts, and a brief rest, like sleep, seem to restore and re-invigorate tired Nature.

The subsequent treatment, and also suggestions respecting different kinds of houses and cheap modes for forcing, I will reserve for a future number.

ZONALE GERANIUMS.

I DOUBT much if there is another plant in cultivation, that, in all hands, is so grateful for culture as this. The cottager's wife consigns its roots to a



cracked pitcher in lieu of a flower-pot, and places it in the feeble light of her narrow window-sill, and in the varying temperature of the little room that at once serves as kitchen and parlor. Yet even in such humble quar-

ters, and under seemingly uncongenial circumstances, we sometimes see a growth as healthy and vigorous with flowers as bright as our best appointed greenhouses can give.

No plant is less susceptible of injury by change of temperature or change of soil, under glass, or in the open border : under nearly every circumstance, its cultivation is a success. No wonder, then, as the efforts of the hybridizer introduce to us yearly scores of varieties, varying in every shade from purest white to richest scarlet, that the class is now so universally popular.

It is always difficult to particularize varieties where we have such a legion to choose from ; and, in naming particular kinds as the *best*, I am well aware that others equally competent to judge may widely differ from me in opinion.

Whites. — We select *White Perfection*, *White Queen*, and *Snowball*, as combining the best qualities for bedding-purposes, differing but little, except in the color of the anthers, which, in the first named, are very prominent, and of a bright red. *White Queen* is very distinct in foliage, which is in itself highly ornamental, being clearly zoned with black, margined with a shade of very light green. *Snowball* forms a globular truss of pure white flowers, borne on a very short footstalk ; so short, that it seems to nestle in the foliage. These three varieties we now grow to the exclusion of Madame Vauchier and other large-growing sorts.

White, with pink centre. — This type is of comparatively recent introduction, and was one of startling novelty. I well remember the first experience we had with *Amelia Grissau*. I could hardly believe it was not an accidental coloring, such as we sometimes see in first flowers ; but when another and another floret expanded to a well-developed truss, retaining its marking for weeks until the petals dropped, there was no doubting the fact, that, startling as it was, it was a reality.

Of this class, the most striking and distinct varieties which have come under our notice are *Bride's-maid* and *Bicolor*. The former is shown by the wood-cut, which, of course, conveys but a meagre representation : in this variety the ground-color is a rich blush, with a large centre spot, clearly defined, of a deep rose-color. The habit of the plant is unusually dwarf : with us it rarely exceeds nine inches in height, though it attains a diameter of eighteen inches by August, from cutting-plants set out in May ; blooming

without intermission the entire season. *Bicolor* is stronger growing, and larger in foliage and flower: the ground-color is pure white; though the centre-marking is less vivid than *Bride's-maid*, being of a rosy salmon shade. It is also a most valuable variety, and we place it second on the list of this class. Grown as specimen-plants under glass, they are magnificent.

Carmine and Rose. — We have long had varieties of this type, among the first of which was a pale rose-color, named *Princess Alice*, that has long been thrown aside; and the class is now represented by varieties having larger and finer-formed flowers, with greater brilliancy of color.

Helen Lindsay is a clear carmine shade, marked at the base of the petals with white; the foliage is rich green without zone: in growth it is rather robust, but a most prolific blooming variety. Another beautiful variety of this type is *Wiltshire Lass*: in color it is a light rose; finely-formed petal; immensely large truss; and of dwarf, compact growth. It is very distinct from the preceding; but it would be difficult to decide which of the two is the more beautiful.

Flame Scarlet. — In this class we have many magnificent varieties; among them the mythical "Indian Yellow." I mean that the *yellow* is rather mythical; for this, though a valuable variety, does not approximate even to Indian Yellow. It is a light or flame-colored scarlet, of fine form and substance, forming a perfect truss of the largest size. Next in value of this color is *Roi d'Italie*, a little deeper in shade, perhaps; of fine form and substance; truss fully five inches in diameter. *Dr. Lindley* is another of this type that we cannot overlook: in color it is nearly identical with Indian Yellow, but is distinct from it in having a clear white centre spot, which, set in the ground-color of dazzling scarlet, makes it one of the most beautiful of all the zonale geraniums.

Scarlet. — Of this class we have an endless number of varieties, of which the well-known "Tom-Thumb Scarlet" is a type. It is now, however, eclipsed by others of even greater brilliancy and larger trusses; superior also in other qualities, all of which render them more desirable than the original. *Scarlet Perfection* is a perfect gem, of dwarf, close habit; foliage dark green and glossy: the flowers are borne on rather short footstalks, are of the most brilliant scarlet, and produced in the greatest profusion during the entire season. This variety is now used as the best scarlet

for ribbon-lines or for massing. *Garibaldi*, which we place next, is the most dwarf of any scarlet we have seen ; rarely exceeding six inches in height, but retaining its foliage and vigor in the hottest weather : the flowers are equally compact, and are borne on footstalks so short, that they seem to be enveloped in the leaves, giving to this variety an appearance particularly rich and novel. It is unsurpassed for pot-culture.

Crimson. — There are fewer varieties of this shade, perhaps, than of any of the others ; and, in profusion of bloom, they are hardly equal to the scarlets. *Leonidis* is one of the best, being short-jointed, with small foliage ; flowers light crimson, very large, and of fine substance, borne in dense corymbs five inches in diameter. *Napolzon* is of a darker shade, partaking a little of the nosegay type : the flowers are conspicuously marked with a white spot at the base of each petal. *Ossian*, a well-known variety of great merit ; flowers bright crimson, large, and finely formed : this variety is one of the best winter-blooming sorts.

Double Varieties. — These have been introduced for the past three seasons, but yet only number four or five sorts, of great similarity in growth and in the color of the flowers. *Ranunculæflora*, one of the first, is perfectly double, of a dark shade of scarlet. *Triomphe de Gregoritta* is a dazzling light scarlet, but only semi-double. *Glorie de Nancy*, the finest of the class, is a crimson ; flowers double and symmetrical, one inch in diameter. All the double varieties yet belong to the coarse-growing, large-foliaged section ; and partly for this reason, and partly, perhaps, from their double character, they are comparatively valueless as effective bedding-plants, but have been greatly prized as curious novelties. Should we be fortunate enough to obtain double varieties from the dwarfer types, — which there is good reason to hope, — we may anticipate far better results.

Striped Varieties. — It is a curious circumstance, that in almost all florists' flowers, such as dahlias, petunias, verbenas, the striped varieties only appear after all other conditions of marking have long been introduced. The zonale geraniums seem to be no exception to this rule ; for although we have had for many years every shade of color from white to red, with many styles of centre-marking, yet 1866, for the first time, developed a striped flower of carmine and white, which has been named *Incomparable*. Others of different shades of striping were raised last season in England, but all

yet of similar color : probably, however, we shall soon have them in large variety.

Nosegay Section. — With this class our experience has not been favorable : the petals drop on the first approach of hot weather, to such an extent as to render the plant quite unsightly.

There is considerable difference of opinion whether this family of plants should be known as geranium or pelargonium. I find the English nursery-men in their catalogues pretty evenly divided on the question.

In this country, all the *zonale*, *variegated*, and *scented* varieties are known under the head "geranium." We believe it is only an affectation of botanical knowledge to designate them otherwise, as it is only of late years that this change has been attempted, which has had the effect to confuse matters to such an extent, that we hardly know which to ask for in ordering from England. Such sweeping changes in nomenclature are always of doubtful expediency, even *if* botanically correct.

Peter Henderson.

SOUTH BERGEN, N.J.



SQUASHES. — We continue our extracts from “The Field and Garden Vegetables of America:” —

The Hubbard Squash should be grown in hills seven feet apart, and three plants allowed to a hill. It is essential that the planting be made as far as possible from similar varieties, as it mixes, or hybridizes, readily with all of its kind. In point of productiveness, it is about equal to the Autumnal Marrow. The average yield from six acres was nearly five tons of marketable squashes to the acre.

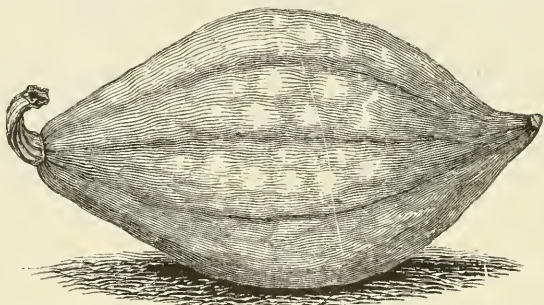


Mr. J. J. H. Gregory of Marblehead, Mass., who brought this excellent variety to notice, and through whose exertions it has become widely disseminated, states that it was introduced into Marblehead about sixty years since by an elderly man who followed marketing from the vicinity of Boston.

Though there appears to be nothing in its history that forbids its having been previously cultivated elsewhere, very few have claimed this to have been the fact; and none who have done so seem to have stood the test of a fair criticism.

The original squash was green, and the blue sub-variety is believed to have been produced by a cross with the Sweet-potato Squash. In the color of the shell of these hybrids, in the lighter orange tint of the flesh, and sometimes in the form, the old sweet-potato variety can yet be traced.

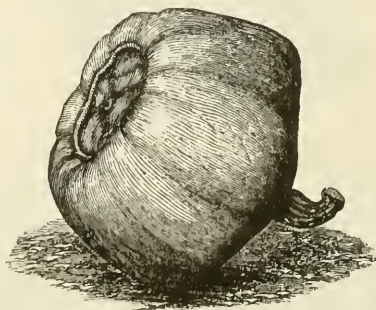
Sweet-potato Squash. — Plant similar in character to that of the Hubbard or Autumnal Marrow. Fruit twelve or fourteen inches long, seven or eight inches thick; sometimes ribbed, but frequently without rib-markings; oblong, tapering to the ends, which are often bent or curved in the manner of some of the types of the Hubbard; stem of medium size, striated skin ash-green, with a smooth, polished surface; flesh salmon-yellow, thick, fine-grained, dry, and



sweet. If the variety is pure, and the fruit well matured, its quality approaches that of the Hubbard and Autumnal Marrow; seed white.

The variety is hardy and productive, keeps well, and is deserving of cultivation. When grown in the vicinity of the last-named sorts, it often becomes mixed, and rapidly degenerates. In its purity it is uniformly of one color, with perhaps the exception of the under surface, which is sometimes paler or yellowish. It has been suggested that this variety and the Hubbard may have originated under similar circumstances.

Improved Turban Squash. — A sub-variety; probably the result of acclima-



tion; is known as the Improved Turban. Compared with the original, the plant

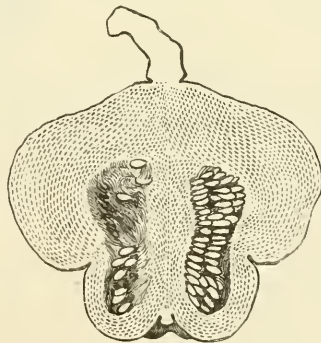
is hardier, yields more abundantly ; and the fruit, besides being quite sweet and delicate, is a much better keeper, and nearly or quite equal in quality to that of the best Autumnal Marrow.

I'oko'hama. — A new variety recently introduced in this country from Japan. Stem running, attaining a length of twelve feet and upwards ; fruit roundish, much flattened, strongly ribbed, deeply sunk at the blossom-end and about the stem ; eight or ten inches at its largest diameter, and weighing from six to



twelve pounds ; skin warted, green while the fruit is young, but afterwards gradually changing to yellow or dull orange ; stem long and slender, woody, elevated, and furrowed, resembling a sugar pumpkin ; flesh orange-yellow, fine-grained, dry, and sweet ; seeds small, somewhat resembling those of the scalloped, or warted crookneck. Season from July to March.

Turban. — Plant running ; leaves of medium size, soft, slightly lobed on the borders ; fruit rounded, flattened, expanding about the stem to a broad, plain,

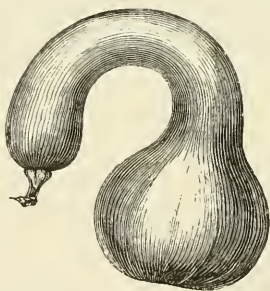


brick-red surface, of ten or twelve inches in diameter. At the blossom-end, the fruit suddenly contracts to an irregular, cone-like point or termination, usually of a greenish color, striped with white, but sometimes yellowish-white without the stripes or variegations, and thus in form and color somewhat resembles a turban ; whence the name. Flesh orange-yellow, thick, fine-grained, sugary, and well fla-

vored ; seed white, comparatively short and small. The Turban Squash is not early, and should have a rich, warm soil, and the advantage of the whole season. Though its keeping-properties are not particularly good, it is early fit for the table, and for use in autumn, or early in winter, must be classed as one of the best of all varieties. The weight varies from five to eight pounds, and the specific gravity is said to exceed that of any other known sort.

After harvesting, the fruit should be immediately stored in a dry and warm situation, laid upon the side to avoid injury to the seed or acorn end, which is peculiarly liable to decay, and in this position remain undisturbed till required for use. In favorable situations and under high culture, six tons have been obtained from an acre.

Winter Crookneck. — This is one of the oldest and most familiar of the winter varieties. Plant hardy and vigorous ; fruit somewhat irregular in form, the neck solid and nearly cylindrical, and the blossom-end more or less swollen. In some specimens the neck is nearly straight, in others sweeping or circular, and sometimes the extremities nearly or quite approach each other ; size very variable, being affected greatly both by soil and season, the weight ranging from six to forty pounds and upwards ; color sometimes green, but, when fully mature, often cream-yellow. The color, like that of the Canada Crookneck, frequently changes



after being harvested. If green when plucked, it gradually becomes paler ; or, if yellow when taken from the vines, it becomes, during the winter, of a reddish-cream color ; flesh salmon-yellow, not uniform in texture or solidity, sometimes coarse, stringy, and nearly worthless for the table ; seeds of medium size, grayish-white, the border darker or brownish. About two hundred are contained in an ounce.

It is a hardy and productive variety ; ripens its crop with great certainty ; suffers less from the depredations of insects than most of the winter sorts ; and, if protected from cold and dampness during the winter months, will keep the entire year.

Wilder Squash. — The Wilder Squash was produced about twelve years since from the Valparaiso and the Autumnal Marrow by Mr. A. W. Stetson of Braintree, Mass. ; and was named for the Hon. M. P. Wilder, — a gentleman widely known for his patriotic devotion to the advancement of agricultural and pomological science in the United States.

The plant is a strong grower, and resembles that of the Valparaiso. The fruit is somewhat ovoid, but rather irregular in form, broadly and faintly ribbed (sometimes, however, without rib-markings), and varies in weight from twelve to thirty pounds and upwards; stem large, striated or reticulated, and often turned at right angles near its connection with the fruit; the opposite extremity terminates in the wart-like excrescence peculiar to the class; skin reddish-yellow, not unlike that of the Autumnal Marrow; the flesh is remarkably thick, of a salmon-yellow color, sweet and well flavored. In some forms of cookery, and especially for pies, it is esteemed equal if not superior to any other variety. When served in the customary manner of serving squash at table, it is inferior to the Hubbard or Autumnal Marrow. The seeds are white.

Winter Striped Crookneck.—This a sub-variety of the Common Winter Crookneck. Fruit of large size, varying in weight from six to twenty-five pounds; neck large and solid; seed-end of medium size, and usually smooth; skin thin, pale green, or light cream-white diversified with lengthwise stripes and plashes of bright green, the colors becoming gradually softer and paler after gathering; flesh bright orange, and, like that of the Common Winter Crookneck, not uniform in texture or in flavor. Different specimens vary greatly in these respects: some are tough and stringy, others fine-grained and well flavored; seeds not distinguishable in size, form, or color from those of the Winter Crookneck. The variety is hardy, grows luxuriantly, is prolific, and keeps well. It is more uniform in shape, and generally more symmetrical, than the Winter Crookneck; though varieties occur of almost every form and color between this and the last named. As the plants require considerable space, the hills should not be less than eight feet apart. Two or three plants are sufficient for a hill. "The 'Crookneck Squash,' as it is commonly but incorrectly called, is a kind of 'pumpkin,' perhaps a genuine species; for it has preserved its identity, to our certain knowledge, ever since the year 1685, when it was described by Ray. Before the introduction of the Autumnal Marrow, it was raised in large quantities for table use during the winter in preference to pumpkins, which it almost entirely superseded. Many farmers now use it instead of pumpkins for cattle; the vine being more productive, and the fruit containing much more nutriment in proportion to its size. It varies considerably in form and color. The best kinds are those which are very much curved, nearly as large at the stem as at the blossom end, and of a rich cream-color. It is said to degenerate in the Middle and Southern States, where probably the Valparaiso, or some kindred variety, may be better adapted to the climate." — *Dr. Harris.*

THE PRICES OF AMERICAN WINES. — I should like to ask some of the great wine-makers who advertise in the columns of this Journal, or write for its pages, what I consider a very pertinent question; viz., How long shall we have to wait before we can buy American wines, as good as we have now, at one-half or one-third the present prices? It will be no answer to say that the present prices are much lower than those of foreign kinds of the same classes. What I and a great many others wish to know is, when shall we have decent American Hock, Claret, and Burgundy at twenty, thirty, or forty cents per bottle? Of course, I and most amateur grape-growers look forward to the time when we shall make our

own wine — and good wine too — for ten cents a bottle ; but just now we will ask the question with the above-named prices.

Almost every one would be glad to have a bottle of good light wine with his dinner ; but very few, comparatively speaking, can indulge in this luxury without a twinge of conscience.

Without having any claims to be considered a skilful connoisseur, I may say that I delight in good wine as much as any one ; but I never get a taste of Johannisberger or Château Margaux without a feeling of sadness stealing on me as I reflect how long a time must pass before I enjoy the same luxury again. Millionnaires may smile at this ; and, to be sure, the question of prices does not affect them : but the great bulk of the people, the would-be wine-drinkers, are deeply interested in this matter, and look, in common with myself, for an answer from Messrs. Hussman, M'Cullough, Werk, or some equally competent person.

Mr. F. R. Elliott, in the December "Horticulturist," estimates, that, in the United States, there are now one and a half million acres of bearing vineyards, and one million acres not yet in bearing. Surely prices ought to fall.

J. M. M., Jun.

FEB. 4, 1868.

S. F. T. sends us the following from Hannibal, Mo. : —

"IN the December number of the Journal I noticed a question from 'D. O. M., Fall's Church, Va.,' involving a new and very grave question to horticulturists. You treated the subject (and very properly) as though the thing spoken of was very much out of the usual course of things, and probably a mistake. Without comment, I wish to state a case that came under my observation. In 1859, I came to this place, soliciting orders for Messrs. A. Frost & Co., of Rochester, N.Y., and became acquainted with a gentleman, and lover of horticulture, who was a physician by profession. He took me to his yard and showed me some very fine seedling peach-trees, which he said were from seed selected from the finest fruit of a Heath clingstone standing in the yard. The old tree was showing signs of decay, and he wished to perpetuate it. I advised him to bud some of them, owing to the uncertainty of seedlings producing fruit like that of the parent tree. He brought out some of his surgical instruments, and I inserted buds from the old clingstone-tree in two of the seedlings. The next spring I cut off the trees, and sprouted them. One was destroyed accidentally : but the other bore some fruit in 1862, which in appearance was the old clingstone over again ; but it ripened two or three weeks earlier, and was a perfect freestone. All the remaining seedlings bore freestone peaches. The doctor said he was very careful to keep off the sprouts, and he was sure there could have been no mistake in that way. The tree is vigorous and healthy, being very large now. It is a good bearer, but still retains its habit of bearing excellent freestone peaches."

[We think there must have been some mistake about the matter referred to by our correspondent. We have known even nursery-men to be quite sure that a tree was budded ; but, on a very close examination, it would be found that a sprout had pushed out and grown so as to deceive even a somewhat practised eye. The seedlings, we are told, bore freestone peaches ; and this is not remark-

able, especially if there were other peach-trees in the neighborhood of the old clingstone. It is true that the stock sometimes produces a change on the bud or graft ; but we are not prepared to believe that it does to so great an extent as to change a peach from a clingstone to a freestone. We once knew a very estimable and truthful lady, who declared that she planted some *quince*-seed in a flower-pot ; but, when we were called to see the plants, behold, they were every one *pear* seedlings ! She has always believed she planted quince-seed. We do know that it is a very easy thing to mistake. — ED.]

LONGWORTH'S WINE-HOUSE. — Nicholas Longworth died at Cincinnati in the year 1863, at the age of eighty. Fifty-nine years earlier, a flatboat had borne him down the stream of the Ohio to a promising village whose census had shown seven hundred and fifty inhabitants, and distant some eight hundred miles from his native town of Newark, N. J.

Entering, as a student, the law-office of the celebrated Jacob Burnet, he prosecuted that profession for twenty-five years, investing the profits in lands in and about Cincinnati, and then retired to manage his estate.

At the bar, he is described as having been quick, shrewd, impressive, earnestly vehement, ready to defend the poor and the ruined ; in private life, upright, free from show, benevolent to the wretched and outcast.

Mr. Longworth gave much attention to general horticulture, but made specialties of grapes and strawberries. For the latter, in their perfection, we are indebted to him : many years, with pen and purse, he prosecuted the "strawberry controversy," until a strawberry-bed surrounded his city, and supplied distant markets. But the successful management of the grape was the crowning feature of his useful life.

Perceiving the adaptability of the southward-sloping gravelly hills along the Ohio to vine-growing, he began his experiments nearly forty-five years ago, aiming to acclimatize foreign vines, but failed of full success, after a persevering trial of varieties from all Europe. About the year 1823, he began with native grapes. A Catawba vine, taken from its native wilds in South Carolina, was seen in a garden at Washington City by Major Adlum, who brought it to the notice of Mr. Longworth. The latter eagerly welcomed the stranger to his gardens, and introduced it to the American public ; saying as he did so, "I have done my country a greater benefit than if I had paid the national debt."

Success in the production of wine from the Catawba, the Isabella, and other native grapes, brought him hearty congratulations from the advocates of temperance, as a promoter of their cause. Vine-dressers flocked in thousands from European vineyards, and settled along the banks of the Ohio, the Missouri, and other rivers.

Longworth devoted hundreds of acres to the grape, began the construction of wine-cellar's whose capacity is a million of bottles, and lived to see the product of wine along the shores of the Ohio River alone amount annually to half a million of gallons. Patient, yet enthusiastic, he labored for still greater results ; and in old age wished a new lease of life, only that he might produce a better grape than the still unsurpassed Catawba. He had foresight and pub-

lic spirit ; was a ready writer ; a patron of artists ; had a wit that sparkled like his wine, without bitterness. With Mrs. Longworth he lived to celebrate their golden wedding ; and the choicest vintage now shipped from the cellars bears the name of "Golden Wedding," in honor of that event.

Major William P. Anderson, the present proprietor of this establishment, grandson of its founder, graduated as a civil-engineer at the Troy Polytechnic Institute ; served during the war, — first as a private in the ranks for several months, and afterwards as an officer on the staff of Major-Gens. Nelson and Burnside, and assistant adjutant-general at head-quarters, Department of the Ohio : but, now preferring the arts of peace, he seems to have inherited the rural tastes and vinous predilections of his ancestor. Fine Alderneys low in his fields. The poor man finds easy access to his purse by announcing himself as "a pensioner of your grandfather." The grape and its product are his study ; and cunning workmen in silver and gold have fashioned the premiums now tendered by him to whatsoever man in America shall produce those "still better grapes." Those constantly employed at the house number about twenty, half of whom are from France, and have held their situations for twelve to fifteen years, as it is found necessary to assign each workman his special duty, and avoid changes. The foreman, Mr. Jules Masson, is from Burgundy ; his assistant, from Alsace.

For the manufacture of wine, a crop of well-ripened grapes is selected and purchased in the vineyard late in October or early in November, and a man sent to superintend the gathering. All decayed or imperfect berries are first removed from the clusters, which are then cut from the stalk, and taken in covered baskets to the wine-house. A lid, or rather a false head, having innumerable holes, is fitted into the mouth of a capacious cask : the clusters are placed upon it, and the grapes worked through into the cask, leaving the stems on the head. Stemming and mashing completed, the *must* may be allowed to stand for some time on the skins of the grapes before pressing, provided a colored wine is desired ; otherwise it is immediately pressed out, and run into large fermenting casks situated in the upper or warmer cellars. The writer noticed one of these casks, having a capacity of over four thousand five hundred gallons. The weight of *must* is expected to be at least eighty-five to ninety. The fermentation thus begun lasts ten to thirty days, varied by the heat of the weather ; the gas evolved being allowed to escape through water by means of a siphon, thus preventing the access of air. The effervescence having ceased, and a sediment been deposited, the pure wine is racked off in the following March, and conducted down into numerous casks provided for the storage of still wines in the deep cellars, whose temperature ranges from 40° to 50° Fahrenheit the year round. These casks have generally a capacity of three hundred to five hundred gallons ; but a number hold fifteen hundred to two thousand gallons each.

To produce sparkling wines, the still or dry wine thus kept in store is forced up again about the month of June, and run into fresh casks ; and to each of these casks there is now added a measure of wine having pure rock-candy in solution sufficient to induce a second fermentation. It is now drawn out into bottles ; and these are securely corked, and are stacked in the upper cellars till about the

month of September, or until the fermentation begins to burst them. The bottles requiring great strength, they are imported from Folembay, a town of Champagne in France : they are as much superior to our best American bottles as the best French plate-glass is superior to common American glass. The French bottle will stand a pressure of twenty-five to thirty atmospheres ; while the American will rarely bear more than sixteen to eighteen, as shown by the manometer used here in testing them. The neck of the French bottle is likewise more uniform. No old nor second-hand bottles are used. The corks are also imported from Epernay.

This second fermentation having now progressed as stated, it is arrested in great measure by lowering the bottles into the vaults built for storage of sparkling wine, where they are stacked by scores of thousands, in long rows resembling cord-wood ; each bottle being laid on its side, along which now collects the sediment generated by the fermentation. The development of gas may not, however, wholly cease, as the occasional bursting of bottles will show. In one hot August, some years ago, the gas evolved by a slight excess of the rock-candy caused the destruction of fifty thousand bottles. The wine thus spilled is, however, conducted by a contrivance of stone gutters to a reservoir, and is distilled into brandy ; seven measures of wine making one of brandy.

The bottled wine thus stacked in store may remain undisturbed for years. When wanted for market, the bottles, without disturbance of their sediment, are carefully placed in racks, their necks inclining downwards, and are gradually raised, day by day, towards a perpendicular and inverted position, each bottle being every day twirled about one-third round and back again by hand several times ; which agitation causes the sediment to collect gradually in the neck, leaving the wine above perfectly clear. This operation requires two to three weeks.

The bottles are now carefully elevated from the cellar ; and, as a very skillful workman removes each cork, the puff of gas expels all sediment, — a process known as “disgorging,” — and the bottle passes to the hand of another, who quickly adjusts its mouth to a tube, through which it receives by gauge a small quantity of the wine-solution of pure rock-candy, — just enough to make good the loss in disgorging ; and the bottle is received by a third workman, and furnished, at a single blow of a mallet, with a new cork, which a fourth workman as quickly secures in its place by the use of an admirable machine. The wine is made.

The bottles are now removed to the packing-room, and there properly labelled, and packed in boxes of twelve quart bottles or twenty-four pint bottles each ; and every box is secured against fraudulent opening by means of Bartlett's patent, — a red tape tied round the centre of the box, fitting in a groove, and sealed with the seal of the wine-house ; which patent has been adopted as the “trade-mark” for pure wines by the American Wine-growers' Association of Ohio.

In the preparation of still wines, the proprietor avails himself of a valuable precaution which is of practical interest to the makers of wine.

The discovery made by L. Pasteur (to which was awarded a gold medal by the Emperor of France at the Paris Exposition), that wine heated to the tem-

perature of sixty degrees centigrade will not turn, become diseased, nor deposit sediment, was immediately put into practice at this wine-house.

The Major constructed a heating chamber with capacity for two thousand bottles of wine; and the result exceeded anticipation. Wine heated in accordance with Pasteur's method, and afterwards exposed to the sun for four weeks, only gained a more perfect clearness; while wine so exposed, without such preparation, showed that trace of sediment which the most careful wine-makers have not hitherto been able to prevent. Dry wine in casks can be heated in the same manner. The history of this discovery in France thus far gives assurance that it will be of incalculable use in the preservation and even the restoration of wine.

Of still wines, there are seven kinds made at this house; namely, Catawba, Isabella, Concord, Virginia Seedling, Ives's Seedling, Rentz Seedling, and Taylor's Bullitt. Of sparkling wines, only Catawba and Isabella have hitherto been manufactured; but the list is increased the present season by adding the Delaware, Ives's Seedling, Virginia Seedling, Concord, and Rentz Seedling. They promise great excellence, and are now for the first time presented to the American public as sparkling wines.

INDIANA HORTICULTURAL SOCIETY. — This assembly of earnest and intelligent fruit-growers has just held its regular annual meeting at the capital of the Hoosier State. In previous years, these active pomologists have done a good work for their fellow-citizens, — first, in clearing away the fogs of a confused synonymy that has prevailed quite extensively; next, in giving the results of their experience with varieties, after thoroughly testing them in different soils and climates, that vary with their situation, from the Ohio-river hills, across the elevated plateau of the centre of the State, with its fertile valleys, and so on, to the drives and sandy stretches of the lake-shores. The greatest length of the State, from north to south, extends through nearly four degrees of latitude; and the rocks upon which it is based, and from which the soil derives in part its peculiarities, are from the old blue limestone of the lower Silurian age, through the Devonian and the sandstones of the coal-measures and the drift of the tertiary period, to the newer tertiary of the lake-region.

In all this diversified extent, we should expect to find a great variety of soil, climate, and other conditions, that must more or less seriously affect the character of the fruits planted, and require a choice in the selection of varieties: such selection has been the special object and design of these men, who have devoted their energies to the subject, and have given the results of their labors to their fellow-citizens in annual reports. Another important work has been performed by them in hunting up valuable new varieties that have been found in the seedling-orchards which were planted in the early times before the general introduction of grafted varieties. At these meetings also, the results of the year's observations by some of the best fruit-men of the State are brought together, and, after due consideration, are laid before the people.

On the 7th of January, these intelligent men assembled in the senate-chamber of the capitol, and spread out a magnificent display of winter fruits, such as was

said by a New-York nursery-man of travel and experience to exceed any similar exhibition he had ever witnessed at Rochester, which is the great centre of the fruit-growers of the Empire State, and the point selected for holding their meetings and exhibitions. This is no mean praise; but the exhibitors of these beautiful fruits of Indiana growth did not seem to feel that they had done any thing extraordinary, nor even that they had come up to some of their former efforts in this winter exhibition.

The president, Mr. I. D. G. Nelson, a well-known and successful fruit-grower of Fort Wayne, called the society to order in the forenoon, and appointed some committees to forward the business of the sessions. The society then adjourned for dinner.

On re-assembling in the afternoon, the Business Committee made their report of a programme, fixing as the first order an address upon the grape-vine, to be given by Dr. Warder of Ohio, who has been a regular visitor at these meetings, and an acknowledged member of the society. In his address, the attention of the audience (which was greatly enlarged by the attendance of the State Agricultural Society) was called especially to the *terminology of the vine*; and the adoption of uniform expressions when speaking or writing about the vine, its treatment, training, and trimming, was urged upon his audience. To aid in this, a few well-selected and direct terms were proposed from the best authorities; and these were recommended for general adoption. The lecture was fully illustrated by portions of grape-vines brought from a neighboring vineyard; and, at its close, the address and the vines were taken up as the theme for an interesting discussion on trimming and training, which occupied the remainder of the afternoon.

In the evening session, the society considered the apple-list by catalogue, for the purpose of putting upon record the result of the year's experience and observations. In this society a great work has already been done, at the suggestion of the American Pomological Society, in the way of cataloguing the fruits with symbols and abbreviations descriptive of their characters and values. This is done in tabular form, and the result is of great value to orchard-planters throughout the State. It is a labor that requires long-continued observations and repeated consultations and amendments, but which has now reached a considerable degree of perfection, and may be taken as a safe guide in the different regions into which the State has been divided, — Northern, Central, and Southern.

Wednesday, Jan. 8. — Amid the confusion and excitement incident to this day of political action at the capital, our fruit-men, who are largely made up of substantial and quiet Quakers, resumed their peaceful labors for the promotion of the comfort of their fellow-citizens.

A communication on the subject of marketing fruits was read from Mr. Matthews of the neighboring State of Illinois; after which Mr. Dunlap of Champaign, in the same State, delivered a lecture upon the same subject, which was replete with valuable information. Both these papers touched important topics to the fruit-grower, and indicated the necessity of preparing their products for safe transportation to market, and of having them placed before the public in an attractive form. The subject, being one of great interest, elicited a full and free discussion among the members.

In the afternoon, Mr. Dunlap addressed the society at some length upon the peculiarities of soil and climate and upon the fruit-prospects of this State and of Illinois ; pointing out the necessity for study, in every region, of the effects produced upon varieties by such peculiarities, and the conclusion which was forced upon all careful observers, — that there was an adaptation of certain fruits to one region, that might be found less successful, or even a total failure, in another section of the country.

The fruits upon exhibition attracted much attention, and were good illustrations of these remarks. Among them were many of great merit, and not a few that seem to have found a most genial home in the fertile soils of Indiana, though coming from widely different and distant sources. There were also quite a number of fruits on exhibition that are peculiar to this State. The remarkable differences in the production of apples, caused by soil and climate, were well illustrated by some of the specimens produced in the extremes of this State. The Rome Beauty, the Janet, Ben Davis, Jonathan, and Winesap, produced on the coal-measures of the southern portions, were much larger and finer than those grown on the limestone soils of the plains in the centre and eastern and northern parts of the State : but the Greenings, Baldwins, Russets, and Spitzenbergs of the north were of superior quality to those of the south ; and the White Pippin, Rambo, Vauderyeres, and Bellflowers of the centre and eastern parts asserted their supremacy over those from other regions.

On the third day, the discussions were kept up with great interest ; though, as usual, some of the members began to fall off. Grapes and some of the small fruits came in for a share of attention, and were fully discussed.

In the afternoon, a valuable paper was read by Allen Furnass, one of the vice-presidents. It was the result of his year's study of insects, verified by careful observation in the field, orchard, and garden ; and included an account of some destructive little animals also. At the close of the reading, Dr. Warder was called upon to speak upon these depredators, which he did at some length in a practical way. He also stated that he had addressed the Agricultural Convention of Ohio on the previous day upon the same subject, with the intent to induce that body to appeal to the legislature for the appointment of a State entomologist, who should make annual report, through the Board of Agriculture, of the insects injurious and beneficial to the farm and garden, with suggestions, based upon a knowledge of their habits, that would enable the farmer to protect his crops from these insidious foes. Such reports, he thought, would be valuable to the farmers of Indiana, who are troubled with insects very similar to those of Ohio.

In this meeting of our society, we have been glad to welcome visitors from other States ; and among them we have had delegates from New York, Ohio, and Illinois, who joined in the discussions very acceptably.

At the appointed hour, four, P.M., the society adjourned in the midst of the most happy feeling of interest in the cause of horticulture.

* * *

GOODYERA MACRANTHA. — A hardy, variegated orchid is somewhat of a novelty : however, we have it in this plant, of which we give a good illustration and description, taken from "The Florist : " —

It has been introduced from Japan in a living state to the St. Petersburg Botanic Garden by M. Maximowicz; and the same or a very similar plant was brought to this country by Mr. J. G. Veitch, on his return from Japan.

The plant is a dwarf-herb, with short stems and approximate leaves, narrowing into the petiole, which is dilated, so as to sheathe the stem by its base. The form of the leaves is ovate, acute; the margin being of a clear pale-yellow, and the central part barred with bright-green reticulations on a deep olive-green ground. The flowers are upwards of an inch long; of a pale-pink color; hairy on the outside, with linear, erect sepals and petals, and a lip of the same form, but shorter and recurved. It is related to the *Georchis biflora* of Lindley; and M. Maximowicz regards it as forming with that plant a very natural section of the genus *Goodyera*.



For garden-purposes, it will be very welcome; because, with much of the beauty of the *Anæctochils*, it is far more manageable than they. Indeed, M. Regel states that it succeeds well in a cool house, if placed in a light situation, protected from the influence of the sun by means of shading.

In Japan it is only met with in cultivation, and brings a high price to the Japanese dealers. M. Regel suspects that this and another species, *G. velutina*, something in the way of *G. discolor*, both come from the southern islands of Japan. Their free growth, easy culture, and nicely-marked leaves, render them both desirable for general cultivation. It is recommended that they should be grown in flat pots, planted in freshly-gathered sphagnum, mixed with a little loamy earth and sand, and kept rather elevated above the edge of the pot.

AT a meeting of the Wine-growers' Association of Ohio, lately held, the president stated that the business of wine-growing is progressing in this country. He thought no better wines were ever made than those presented here to-day. A few years ago, we had but a single wine-grape (the Catawba); but that has become diseased, and it is supplanted by several other varieties. He complimented the wine-growers of Missouri for their foresight in planting new varieties. The Concord produces a thousand gallons per acre. They have tested a new variety (the Cunningham), that produces the best wine in the world. The Chair produced the fact, that Ohio wines were quoted in Berlin; showing that the tables are turned, and America is sending wines to Europe.

He thought that the wine-growers were doing a better work for temperance than the advocates of cold water. Men will have some stimulant; and what better than the light native wines of this country? With plenty of such wine, the people will not drink strong liquors nor sour beer; and hence we are the pioneers of a truly temperance age. From the time the shepherds of Judæa, while tending their flocks, watched for the infant Saviour, wine was the beverage of the people. Even the Saviour himself, on a festive occasion, there being no wine at hand, changed water into wine. Hence he could not think that those employed in the growing of the grape for wine merited the contumely of the community. We shall induce the Americans to drink the generous wines of our vineyards instead of whiskey. We must raise wine at a low price, so that the common people can have it.

He thought that next season there would be eight millions of Ives's seedling grapes growing, and soon there would be plenty for all. He looked at the future as glorious for the wine-producers. He thought the Catawba should not be given up. A sample to-day was undoubtedly better than any wine that can be imported from Europe.

Mr. Husmann took the ground, that, when must contains all the qualities of a first-class wine, it would be very foolish to manipulate it; but if the must would be improved by the addition of sugar, which is one of the elements of the grape, the addition might very properly be made. So also, should the must contain too much acid, he would tone it down with water. He would add nothing except sugar and water, which are the elements that pure wine contains.

He challenged the world to show that such wines are prejudicial to health.

Dr. Heighway spoke about receiving wines from France that were declared to be pure, but every one of which contained precipitate of lead. He protested against adding any thing to wine that is not one of its natural elements. When wine is too sour, it is almost impossible to correct it, and it had better go into vinegar. He hoped that American growers will never resort to logwood or sugar-of-lead in making wine.

The president contended that Nature had put all the sugar into the grapes grown in this country that is required for good wine; and he protested against the addition of any sugar under any circumstances.

Dr. Warder was appointed (with Mr. Martin as alternate) to represent the Association at the Lake-shore Wine-growers' meeting at Cleveland on the 19th of February.

WESTERN ORCHARDS. — In travelling East, my attention was directed to the striking difference in orchard-management, as practised there, from that which we practise in the West. What seemed strange was the impunity with which people could cut and slash in the tops of orchard-trees, — trees severely pruned, tops regrafted, — with apparently none of the serious results that would follow a similar practice in the West. Speak with the proprietor in reference to his orchard, his first remark would be some form of apology for not keeping his trees *better pruned*. Our first inquiry would be, "At what season do you prune?" The reply most likely, "Oh! any time along in the spring;" accompanied by a blank expression of countenance, from which it was manifest that little importance was attached to the question concerning the best season to prune. But with us in Northern Illinois this is an important question. Now, the inquiry arises, Why is this a more important question with us than it is in Western New York?

The solution of this question lies in difference of climate. The East scarcely gets a breath of the soft, enervating winds that almost continually sweep up the Valley of the Mississippi during summer and autumn. These winds may be called the *South-American monsoons*, originating in the fact that what is our summer period is the winter period of South America. Thus our summers and autumns, being fanned by these mild southern breezes, are such as to favor a free growth, but not always such as to insure well-ripened wood, and toughness of fibre. Hence it is that our trees are not always prepared for the fitful changes of winter. It is not that our winters are more severe, but that the growing wood of our trees is less prepared for the cold. Every nursery-man in Northern Illinois and Iowa has learned the importance of having all his scions cut, and safely put away for winter-grafting, before cold weather sets in. It is for this reason, also, that the quality of hardiness becomes with us in the West such an important consideration.

From this, also, we learn why it is that we cannot *cut* and *saw* in the tops of our trees with impunity "any time along in the spring." If the sapwood is affected by winter, it is better to prune last of February, or in March, so that the wound will have full time to season before circulation commences: otherwise a blackened, diseased condition is the result. If pruning cannot be done then, it had better be omitted until after midsummer, — after the upward circulation becomes sluggish.

We also find in this peculiarity of our climate the reason why top-grafting in old orchards is generally less successful in the West. If the previous winter has been favorable, the grafts will probably do well the first summer. But probably this young succulent wood of the first summer will be more or less injured by the succeeding winter. The next spring, the old branches are mostly cut away to give the grafts a chance. The result is *sprouts* in abundance, while the grafts show little tendency to start with a healthy growth.

During the growing period, our prevailing winds being from the south, and our rain-storms from the south-west, our orchard-trees almost invariably acquire a lean towards the north-east. It is mainly from this circumstance that the bodies of trees are injured by winter. Leaning to the north-east, the body of the tree re-

ceives the direct rays of the two-o'clock sun in winter ; and it is from the effects of the sun on the frozen wood that our trees are damaged. If the body of the tree is damaged by winter, it is always on the sunny side, — never on the north side. It is highly important to guard against this evil. First we should plant the tree with a slight lean to the south-west ; then, in our subsequent pruning, we should be more severe on the north-east side of the tree, and encourage the heaviest branches on the sunny side.

It is from these various climatic conditions that the subject of horticulture becomes more complicated with us than in Eastern localities. Hence we cannot in all matters safely rely upon our Eastern friends as our horticultural instructors. Western men must learn for themselves, keeping always in view the peculiarities of our changeable climate.

Tyler M'Whorter.

MILLERSBURG, ILL.

MARKETING FRUITS. — PACKAGES. — PREMIUM. — It is a good sign when the primary meetings of horticulture, such as the local societies, begin to consider and discuss the best modes of marketing fruits. There is great room for improvement in this matter. All appear to be striving after such improvement ; and many valuable suggestions have been made at the several gatherings of the season, from the great American Pomological Society to the farmers' clubs.

The mechanics have met the producers more than half-way, and have already furnished quite a variety of packages for the different kinds of fruit. Indeed, the question is becoming a serious one as to which is the best, and which to adopt.

The municipal regulations of some markets require a definite measure, and annoying difficulties have arisen from the fact that some of these packages do not correspond to the fixed standards. In some places, fruits are sold by the pound ; which is a very good regulation, and is pretty generally followed in the preparation of the grapes packed for market. The peach boxes and baskets are of such uncertain size, that the people feel they are cheated in the measure. In some markets they are honestly made so as to contain one bushel or two bushels, or certain definite portions of that unit ; but when a fruit-grower sends such packages to another market, where the definite measure is not required, he suffers great loss, inasmuch as the full box sells for no more than the short box containing fruit of similar quality. This he must continue to suffer, or he is compelled to throw away his stock of boxes and baskets, and procure others that will enable him to compete in that market.

In this connection, it will be well for the ingenious manufacturers who are providing these conveniences for the fruit-grower to bear in mind that Mr. J. Knox of Pittsburg, Penn., intends offering a premium of a hundred dollars to the inventor or exhibitor of the best strawberry-box. The award is to be made at his next strawberry-exhibition, which will occur in June of this year, 1868.

Berries require a small package. The capacity of one quart is a very good size, and the one generally adopted. The fruit is picked, and packed at once into the box or basket, and not again handled until placed upon the plate of the purchaser. These boxes are packed for transportation in crates, or ventilated

boxes of convenient size. The American Company has furnished a very good package of this kind: it is a basket made of splints of wood, so put together as to be sufficiently strong, and yet light. The objection to this package consists in the expense, which is too high in proportion to the value of the fruit. The basket should be so cheap as to go with the fruit to the table of the consumer; and it should never be used a second time. Indeed, after having been once used, they are soiled, and would injure the sale of handsome fruit if it were packed in them: therefore the market-man should realize such a price for his berries as to justify the loss of the package; but, at the average rates for strawberries in most markets, the producer cannot afford to lose three cents a quart for the package.

* * *

APPLE-ROOT GRAFTS. — The mode of propagating fruit-trees by using sections of roots has been very fully discussed in years long past, and by several associations in which were the most intelligent Western nursery-men. The same question is again attracting attention, and has been considerably agitated within the past year.

It has been decided that a root-graft is only "a cutting helped," and therefore the result of propagating trees in this way is at least as good as if they were grown from cuttings. And why not grow them from cuttings? Simply that root-grafts are infinitely more certain to live, and produce more growth at one and two years; and that some varieties are very hard to strike at all from cuttings.

But it is said trees grown from root-grafts are more tender in the nursery, and are longer in coming into bearing, than those grafted in the stock or budded. There may be something in this; and as very intelligent observers are arrayed on the negative side of this question, who cite some strong testimony, it may be well to pause, and examine a little into the matter.

There can be no reason why plants grown from cuttings should not be as good as those produced by the same cutting grafted. Do we not propagate the currant, gooseberry, grape, and a hundred other plants, in this way? and nobody ever suggested that the fruitfulness of these varieties, their tenderness or hardness, or any other quality, was affected by the manner of their propagation.

In rich soils highly cultivated, and in late-growing seasons, it may often happen that the young apple-trees in their first year will not have completed their growth in good season, cast their leaves, and prepared for winter. Here is where the *tenderness* of root-grafts comes in. An early frost of considerable severity finds them full of sap, and all unprepared for the attack: the bark is burst near the ground, and often, during a severe winter, the pith is injured; and such trees, though they may survive, will always show discoloration at the heart. They need not be condemned, however; they need not be lost: all that is necessary will be to cut them off at or near the ground the next spring, and let them start again, and they will make noble specimens the second year. If they have been banked up with the plough in the autumn, as such trees always should be in the end of their first year at least, there will be plenty of sound wood to cut to, and

from which a good shoot can be produced. "But," says one, "will they not grow so vigorously this second season as to be liable to the same disaster under a like attack of frost?" No: not if the cultivator does his duty by them. When they have reached a height of two feet at midsummer, they should all be topped by pinching out the leader: this will encourage the production of numerous laterals, and will make nice bushy plants. The growth thus divided will not be so rank as if let alone; and the experience of the first year will have taught the cultivator a lesson as to the treatment of the nursery, which will not be ploughed so late in the summer; and the growth will be perfected at an earlier period: then they will be able to withstand the cold.

Still there is a great difference as to the hardiness of different varieties, as well as in their vigor of growth; and in practice it is found much better to graft or bud some sorts, even at standard height, upon stocks that have proved themselves pretty hardy by withstanding two or three winters. This is particularly desirable with some kinds that grow feebly while young; and for such the practice of double-working has been found a very successful plan for getting up a stock. Some thrifty and hardy variety is root-grafted, and grown one or two years, according to the size produced; and these stocks are budded with the weak-growing sorts and with those that have proved tender in the way of bark-bursting. The happiest results have followed.

In answer to the question of a Kansas correspondent, as to whether sections of lateral roots should ever be used, or whether the grafter should use the tap-roots exclusively, it may be remarked, that any piece of root which will start and sustain the scion will answer; and that experiments with first, second, and third cuts of the root showed that one was as good as the other. No experiments were tried with lateral roots at that time; nor did it occur to the grafter who made the trial, because the apple-stocks seldom have any such laterals large enough for grafting. Another experiment was tried, however; and that was the use of thorn-roots for pear-scions, in which all the roots from young wild thorns were used indiscriminately, many of them being lateral roots: but no difference was observed. They were exceedingly hard to work, and the experiment was not very successful.

As to the unfruitfulness of the trees produced from root-grafts, the testimony of different observers, with different varieties and upon different soils, is all so contradictory, that no safe conclusions can be drawn therefrom. Occasionally we find in striking contrast a row of a given kind, root-grafted alongside of one that has been budded or stock-grafted, — the one tardy in bearing, the other early productive; but even here there may be some other cause that might account for the disparity.

Among our varieties, the difference in both hardiness and early productiveness is well marked, and universally admitted; and the effect of deep, rich soils in making many varieties tardy bearers is easily understood, as the wood-growth is stimulated at the expense of the production of fruit.

* * *

WE copy from the Transactions of the Massachusetts Horticultural Society a portion of the excellent Report of the Committee on Fruits for the year 1867, by W. C. Strong, chairman : —

It is a rare occurrence that a season may be called perfect for the development of all the various kinds of fruit. So many conditions are required, covering the cold of winter, the heat and moisture of summer, the early and late frosts, the growth of previous years, so multiplied, various, and disconnected are the elements, that we are accustomed to expect unequal results. It is a reason for thankfulness that we have such a variety in fruits, so distinct and independent, that the abundance of one crop may be a supply for the want of another. With us, a total failure is even more rare than perfect success. If we examine the record of fruits exhibited before this society for nearly twoscore years, we shall find, that, while the items vary, the tables are almost uniformly filled. It is with the greatest surprise that we note the conclusions of an eminent cultivator, "after two years of travelling all over the Christian world, . . . that America is the worst fruit-growing country in the world, except the north of Europe." It is indeed true, that in this transition period of exhaustion of our virgin soil, and aridity of climate consequent upon the wholesale destruction of our forests, together with a natural increase of injurious insects, certain crops are not as spontaneous as in former years. The peach will be recalled as a marked illustration of this fact. Yet, if we look on the encouraging side, we shall find that every season of the year is abundantly supplied with fruits of the highest known excellence ; so that we are rather inclined to say that exactly the reverse of Mr. Sargent's proposition is true. Take the crops in their order. For forced fruits, our clear, bright sun more than counterbalances the extreme cold of winter. With ease almost amounting to certainty, we can produce the best of forced fruits for the spring months. Promptly in June comes the inestimable strawberry, nowhere surpassed, and never before equalled, in quantity. The small fruits which follow, — the raspberry, the currant, blackberry, and native gooseberry, — all yield almost certain returns for judicious culture. The pear was never more abundant, or more easy of management. The successful example of several apple-orchardists demonstrates that this standard fruit can be grown with entire success, even in the most infected districts. And for the life-invigorating grape, with all the drawbacks of rot and mildew and early frosts, — what can we say for the grape ? This we will say, that in this unprecedented year of rain, with complete failure in some localities, and with some varieties, yet a considerable, and, under the circumstances, a most encouraging crop was gathered even in New England ; a single exceptional Isabella vine yielding over a thousand pounds under the very shadow of the White Mountains. Enterprising cultivators in New England were never more hopeful for the grape than now. If we go back from the Atlantic coast, where the season has been, in marked contrast, excessively dry, we shall find the grape-crop has fully equalled that of the most famous wine-growing districts in the world, with the possible exception of our own Pacific coast. An eminent and reliable writer who has had the best facilities for procuring statistics has yet so greatly exceeded previous estimates, that we must doubt the accuracy of his data. He gives the number of acres of grapes in bearing, east of the Rocky-Mountain range, in 1867, as 1,500,000. The yield is over

two tons per acre. Three million tons of grapes at ten cents per pound makes the round value of \$600,000,000 (six hundred million dollars). He also estimates the land planted in vineyard, not yet in bearing, at a million acres. Granting this to be an over-estimate, yet it indicates a rapid stride, and a success in grape-culture which is without a parallel, if we except our own Golden State, where single vineyardists have a million vines in bearing. In the foregoing list, or in fruits of equal value, can any country show a brighter prospect? Grant that the peach and the plum fail in many localities, and that the cherry is less certain than formerly; yet even these are by no means abandoned fruits, and throughout wide regions they are abundantly prolific. This is our bright side of the picture; and while we freely admit that far more care and toil are required than when the soil was new, yet we must be encouraged by the fact that ours is not an exceptional case. Such a list of fruits of such intrinsic value cannot be produced in any temperate clime, the world over, without the price of eternal vigilance. It is our duty to note the influence of the varying seasons, and other operating causes, in order that we may, as far as possible, eliminate every element of failure.

The past season has been remarkable chiefly for the amount of rain-fall during the growing months. From R. T. Paine, Esq., who has kept a careful record at Boston for the past forty years, we have obtained the following data:—

The whole amount of rain for the year was 49.84 inches; being an excess of 4.5 inches over the average for forty years past. The amount for July was 5.68 inches; which is an excess, over the monthly average, of 1.54 inches. In August the amount was much greater, reaching the large quantity of 9.96 inches; which is 5.54 inches above the average. Large as this is, the quantity increases as we go south on the Atlantic coast, until it reaches the unprecedented amount of 17 inches at Philadelphia during the single month of August. The nearest approach to this was in July, 1863, when the monthly fall was 12.5 inches, and 5.64 inches in August; and the total for that year was the enormous amount of 67.84 inches. The amount for 1862 was 61.06 inches; which shows an aggregate of 128.9 inches in two consecutive years,—over 10½ solid feet of water; an ample amount for a second deluge. This is 38.3 inches in excess of the average gauge for two years, which is 90.06 inches.

The extremes of variation are between the maximum of 1863 and the minimum fall of twenty-six inches in 1846, showing a difference of over forty inches. It is evident that the common impression, that about the same quantity of rain falls each year, is an error. Yet the cases cited are extremes, and it is true that the variations from the average are not greater than we might expect. We were greatly relieved the present season by the absence of rain during the ripening month of September; the fall being only three-quarters of an inch, or one-thirteenth part as much as in August previous. This change was an inestimable advantage to the grape and other ripening crops; and also to the trees, which were unusually succulent. Yet the remedy came too late to prevent the injury caused by the excessive rain of the summer months. Forage-plants may luxuriate in the moisture; but even with these the growth is too succulent. Of course, the evil is greatly mitigated by thorough drainage; and it is less felt in soils naturally porous. Yet nothing can compensate for the lack of the warm, genial influence

of the sun. Vegetable growth has been luxuriant ; but there has been a uniform lack of flavor in all our fruits. Perhaps the pear has suffered in quality as much as any fruit ; being watery, and lacking in the high flavor of former years. Many kinds have 'cracked' worse than ever, owing to the stagnant action of the roots in the cold, wet ground. As we should expect, grapes have been subject to the different forms of mildew ; which cause, in addition to the unusually late start in the spring, has prevented many kinds from ripening. It seems evident that moderate dryness is essential to the development of the highest quality in fruit. Along the shores of Lake Erie, the showers which are generated by the lakes are carried over and empty themselves upon the interior hill-country, while the shore belt and the islands are favored with a gentle humidity and a uniformity of temperature which insure the best results. In the vicinity of Boston, where the average rain-fall during the three summer months is about $12\frac{1}{2}$ inches (an inch more than at Cleveland, O., and from three to four inches more than in the wine districts of Europe), we must choose dryer and more porous soils, steeper declivities ; we must see that drainage is perfect ; in a word, we must make it the great problem to counteract the effect of a superabundance of rain. The difficulty is that our rain is most unequally distributed, excessive drought following excessive rain. Belts of evergreens have a surprising effect in modifying these extremes, and preserving a uniformity of temperature and moisture. But we have exceeded our limits in these speculations, and now turn to record the work of the season.

On the 16th of January, your committee visited the fruit-house of E. S. Converse, in Malden, constructed on the plan of Prof. Nyce. Mr. Converse gave us most liberal opportunity for testing the keeping qualities of various fruits, and also for inspecting the plan and merits of the house. Well-known principles of science have been applied in the construction of the house, so that the results are highly satisfactory. While there are some exceptions, the strawberry being an example, the great majority of fruits may be kept as in a dormant state for a great length of time. In most cases, the flavor of the fruit is not materially affected, though the change is generally rapid when brought into the open air. With good judgment in the selection of varieties, there can be no doubt of the practical value of these fruit-houses ; though it is to be borne in mind that fruits out of season are often out of place. Bartlett pears sold at lower rates in November than in September. Were they brought in as abundantly in the latter month, the market would be quite over-stocked. This law of the market is recognized by every dealer ; no enterprise for securing the earliest fruits being considered hazardous, while the late varieties of a given kind of fruit have to meet a satiated appetite. This accounts, in a degree, for the neglect of the so-called ever-bearing, or fall-bearing, varieties of fruit. At the Pomological Convention of this year, there was a disposition to condemn the entire list. The Catawissa Raspberry, at least, deserves to be excepted, since it is so entirely separated from all the other crops of small fruits as to be called an independent crop. Under good management, it will yield a large crop in September ; not valuable for the market, it is true, but supplying a tea-table want which has been met only by peaches.

As has been stated, the appetite is keen for early fruits ; for good specimens of which, extravagant prices are paid. No variety of fruit is so well adapted for forcing as the grape. It is easy of management ; it retains the highest excellence of flavor under glass ; it is an attractive and salable fruit in the market. As a pecuniary enterprise, we think, that in sheltered positions, and in low houses adapted solely to this purpose, grapes may be forced with great success, and at prices much below those now ruling, during the months of April, May, and a part of June. M. H. Simpson was the only exhibitor of early grapes. His Muscat of Alexandria, on the 22d of June, were compact and fine bunches, yet scarcely ripe. C. S. Holbrook has been very successful in growing forced peaches, bringing them in just before the ripening of strawberries, in June, and obtaining from twelve to eighteen dollars per dozen for the fruit. The house in which these are grown is sixty feet long, and contains thirty trees, in boxes three feet square. The present was the thirteenth crop, and on one tree two hundred and twenty fruit were picked. These figures are remarkable, and, it must be added, are entirely deceptive in estimating the profit of the crop. We may say it is an extraordinary crop of an extraordinary tree, at an extraordinary price. Probably the crop of this tree did not attain the size to command any thing like the price named. Yet enough is seen and known to warrant the statement, that, with skilful and high culture, forced fruits are a source of profit as well as highest enjoyment. It is to be hoped that the number of contributors of forced strawberries, peaches, and grapes, instead of diminishing, may at least increase relatively with our population.

On the 15th of June, the Jenny Lind Strawberry opened the list of out-door fruits ; a worthy herald of the continuous and bountiful supply which fills out the year to its close. Other varieties are almost equally early ; the Boston Pine, for example, being exhibited on the same day with the Jenny Lind. The Wilson has been an unpopular fruit in our markets, on account of its poor quality ; but its productiveness is so marked, that it is gaining favor. The Jucunda is a fine-looking fruit, yet not equal to La Constante in this respect ; while it has disappointed us, as to quality and productiveness, upon its first year of trial : but we trust another trial, and in various soils, may demonstrate its claim to the high praise it has received in other sections.

The favorable opinion entertained last year of the Seedling Strawberry of Hon. M. P. Wilder, a cross between La Constante and Hovey's Seedling, and now designated as No. 60, is confirmed this season. The fruit is of the largest size, of good flavor, in appearance a medium between its parents, not so polished or glazed, and with seeds more embedded than in La Constante. An examination of the bed gave indications of vigor and decided productiveness. Mr. Wilder's other seedling was shown as No. 13, and more nearly resembles Hovey's Seedling. Both varieties are promising, and we trust the former may prove worthy of the name of the distinguished originator. Other new strawberries were exhibited, but did not appear to be noteworthy. La Constante continues to be the finest exhibition-fruit, though not sufficiently productive to compete with the Hovey, Triomphe de Gand, Agriculturist, and Wilson, in the market. . . .

Pears have been abundant and of fine size, but very deficient in quality,

owing to the superabundance of rain and the lack of sunshine and heat. Beurré Giffard was prominent as the best early kind on exhibition, receiving the three prizes. Clapp's Favorite maintained its high reputation, gaining the first prize for autumn. Doyenné du Comice wins favor with each season, and ranks among the very best. Buerré d'Anjou, Sheldon, Beurré Superfin, Swan's Orange, Urbaniste, Duchesse, Louise Bonne, and Beurré Bosc, all sustained their high rank as autumn pears. Mention may also be made of fine dishes of Dix, St. Michael, Glout Morceau, and Beurré Diel, not commending them to public favor, but as showing that protection and favoring circumstances will, even now, restore these old favorites. It is clearly incorrect to say that these varieties have deteriorated: we may rather say that the conditions of healthy growth have failed. Dr. Shurtleff exhibited specimens of his seedling pears, a lengthy description of which was given in the report of last year; to which we can add nothing at present. The following seedlings worthy of note were exhibited by F. and L. Clapp: Sarah, above medium, obovate, yellowish, with russet patches; flesh white, melting, sweet, flavor of the Seckel; ripe Oct. 12; promising. Newhall, a seedling from Marie Louise, which it resembles; promises well; ripe Oct. 20. Also a seedling not named, a russet, above medium, a perfect pyramid; juicy; a spicy, mace-like flavor; good. F. Dana extends his long list of seedlings, exhibiting one resembling the Marie Louise, and another very like the Dix.

The Goodale Pear was on the tables at the annual exhibition; but, as it has been fully described in previous reports, we can add nothing. Asahel Foot exhibited a seedling of the Seckel, which is more oblate, but otherwise like its parent. Another seedling by Mr. Foot is called Weeping Willow, from the remarkably pendulous habit of the tree; but the fruit is of third quality. The only prominent winter varieties were Lawrence, Winter Nelis, and Caen de France.

Apples are grown with perfect success in the very heart of infected districts. It may be difficult, yet plainly it is possible, to triumph over canker-worms, curculio, and caterpillars. When the cultivator has but few trees, it is scarcely an object to exercise eternal vigilance; but, for a large orchard, the cost of continuous tarring for the canker-worm is comparatively trifling. Enterprise is the main requisite. It has been a great mistake to sacrifice healthy young orchards, which, with little expense, would probably yield as large profit as any other product. The single orchard of the Messrs. Clapp disproves the whole list of diseased, neglected, and stunted orchards to be seen on every side. The evil is, however, in many cases, beyond remedy. Trees which have been stripped of foliage for three or four years, especially if of full age, become so stunted and checked as to be scarcely worth recovering. Hence the greater need of protecting all that are yet vigorous.

The Williams was, as usual, the most prominent summer apple, followed by the Gravenstein in autumn, and, with unusual prominence, by the Hubbardston for winter. Of course, it is not safe to follow these indications blindly. The best and most showy fruits may not be productive, or adapted to general culture; yet it is believed that an examination of the prize varieties of the various fruits will, in the main, guide to safe conclusions.

AZALEAS AFTER FLOWERING. — Azaleas after flowering should be repotted if they require it, be placed in a house with a gentle heat, and have frequent syringings and a moist atmosphere, with a moderate amount of air, in order to encourage free growth. Continue them in the house until a good growth has been made; then they should have abundance of air, and a situation well exposed to the light. Supply them with plenty of water, and keep them under glass until the buds are set, which you may know by feeling the points of the shoots. Those which have set for bloom will feel as if there were a hard knot in them; but, if there are no bloom-buds, the points of the shoots will be soft and empty. They may then be placed out of doors if the season admits: take them in towards the close of September, and place them in a light and airy situation in a greenhouse from which frost is merely excluded, giving plenty of air. It is better to retain the plants under glass after the buds are set, keeping them in a cool, well-ventilated structure.

CYANOPHYLLUM MAGNIFICUM PROPAGATION. — This plant is propagated by cuttings; the tops of the shoots being taken off below the second joint, not counting the extreme point. Cut them across below the lowest joint, and remove the lowest pair of leaves. Drain a pot well, and fill it to three-fourths its depth with a compost of sandy peat two-thirds, and one-third sandy loam, then to the rim with silver sand. A hole is then made in the centre of the pot, the cutting inserted to the joint next above that at which it was cut over, and the hole around the cutting filled with sand. A gentle watering should then be given, and the pot plunged in a hotbed of from seventy to seventy-five degrees, and covered with a bell-glass. Shade from bright sun; and with a brisk heat, and the soil kept moist, but not wet, the cutting will be well rooted in about six weeks, and should be hardened off, potted, and grown on.

FLOWER-POTS. — The following are the technical names, and their sizes in inches: Thimbles and thumbs; any size under three inches diameter at the top.

	Width of top in inches.	Depth in inches.	Old Name.
Three-inch pot	3	4	60's.
Five-inch	5	5	48's.
Six-inch	6	6	32's.
Eight-inch	8	8	24's.
Nine-inch	9	9	16's.
Eleven-inch	11	10	12's.
Twelve-inch	12	11	8's.
Thirteen-inch	13	12	6's.
Fifteen-inch	15	13	4's.
Eighteen-inch	18	14	2's.



THE Editors of "The American Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulturists.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

G. B., Roxbury, Mass. — I have in my garden plenty of red and white Dutch currant-bushes; but I am advised to root up these, and plant the larger sorts. What say you? — Say no. The varieties you have named are among the best. We should advise you to plant a few of Versaillaise, Dana's White, and others of large size.

READER, Marlborough, Mass. — What kinds of raspberries do well? What distance apart should they be set in field-culture? What is the yield per acre? What is the general market-price per quart in Boston? Do they need winter-protection? — The Franconia is the variety most extensively cultivated about Boston for the market. It bears transportation well. It is not a high-flavored sort. Knevett's Giant is large, early, and a berry of very good quality. Among the newer varieties, the Philadelphia is said to be very productive, and profitable for market-purposes. The Clarke is another new sort that is attracting a good deal of attention at the present time; the plants finding a ready sale at high prices. If we should recommend but one, we should say Franconia. We should advise putting the rows about four feet apart, and the plants three to three and a half feet apart in the rows, so that there may be plenty of room for the plants to spread and form a stool. The yield per acre varies from five hundred to two thousand quarts, according to soil and cultivation. The market-price in former years was about the same as that of strawberries; but last year we know that sixty cents a quart was not considered too high a price. The red raspberries need protection, and all of them succeed the better for it. We wonder that the market-gardeners of Massachusetts should have so neglected this fruit for several years past; for it is more profitable than the strawberry-crop.

WESTERNER. — Most of my neighbors believe that there is more profit in raising large apples than small for market, even if of poor quality. I do not agree with them, and have planted such varieties as give only small or medium-sized fruit. What is your opinion? — It depends somewhat upon what use is to be made of the fruit. If for cooking, every thing else being equal, the largest apples are the best; if for the dessert, the reverse is true. The Lady Apple, though very small, is yet one of the most beautiful little apples ever grown; yet we doubt if its cultivation would prove profitable. The Garden Royal, Fameuse, and others of that size, are among the best of apples for table-use; and considering the price they sell for, as compared with the larger and coarser apples, are quite as profitable to grow.

NORTHERN NEW HAMPSHIRE. — Cranberries grow spontaneously in this region, and there are thousands of acres where they would flourish if once the land was stocked with the plants. Can the culture of the cranberry be made profitable at this distance from a market? — We think so: for there is always a great demand for this fruit; and the price is high enough to pay for considerable pains and expense, not only to raise the crop, but to get it to market. The market cannot be overstocked with this fruit. There are many choice places where no crop that could possibly be raised would pay so well as this.

E. M., Rochester, N.Y. — Can scions of "President" I see that you have recently figured in your Journal be obtained of the originator or elsewhere? — We think not. Dr. Shurtleff has let out none of his seedlings yet. We do not know what his intentions are. He can answer, and possibly may before long.

W. B. C., Duncannon, Penn. — Which is the cheapest and best of the manures named below, considering the prices annexed? — barnyard manure at four dollars a cord, bone-dust at fifty dollars per ton, lime at twenty cents per bushel. What season is it best to apply bone-dust? How, and in what quantity per acre? How often should the application be repeated? — The barnyard manure is undoubtedly the cheapest. It should, however, if it is to be used for grapes, be allowed to lie over at least a whole year, and become thoroughly decomposed: it may then be applied in moderate quantities. Should apply bone-dust in the spring, and plough or cultivate it in lightly. We have used of ground bone, which works slower than the bone-dust, at the rate of a thousand pounds to the acre; but we should not advise using more than five or six hundred pounds of the dust. Lime does well on some soils, and may be used to some extent. We can give no definite rule about the application of special manures to vineyards that will apply in all cases. If you see that the vines need some fertilizer, apply it; always avoiding coarse, unfermented manures.

T. J. P., Goshen, O. — I have a number of Vicar-of-Winkfield pear-trees, both standards and dwarfs, two years planted, of good size and vigorous growth that I wish to change to some more desirable sort. Can it be done successfully by cutting off the entire top, and grafting into the stem? It is too much of a job to graft all the branches. I have the Beurré Clairgeau on quince-roots; but the trees do not appear to do well. The fruit is all that could be desired. Will the variety thrive well when double-worked? — We do not advise cutting off the entire top of your trees at once, unless they are quite small. If the branches are of any considerable size, cut off and graft enough of them, so that, when the grafts grow, they will form a symmetrical head. Small branches may be splice-grafted very neatly. It seems to us not too much of a job; for what is worth doing at all is worth doing well. The Beurré Clairgeau will thrive well when double-worked on some strong-growing sort. Generally there is no difficulty in growing this sort; but the fruit is not always of good quality.

C. G., Philadelphia. — At page 277, vol. i., C. C. Miller mentions the fact that the birds strip the black-cap raspberries from the bush, and will not touch the golden-cap growing beside them. May I state a little of my experience? During a recent fortnight's absence of self and wife from our country-home, the pantry or store-room was invaded by rats. The parchment and paper top of every pot and tumbler of raspberry-preserves was gnawed off, those vessels upset, the black-cap raspberries more or less eaten up, and the red Antwerps apparently not diminished in weight or bulk: the former seem to have been devoured with avidity and great rejoicing (to judge by the marks of the rat-paws and sirup on the wall), while the red were abandoned with contempt.

C. — Is there a demand for cucumbers at this season of the year? Is it difficult, and does it pay, to raise them? — There is some demand for them from the best hotels in the large cities. It is rather difficult to grow good ones. It will pay well when you are successful in getting a crop. — See a recent number of the *Journal* for an article on the subject.

J. W. H., College Hill, O., writes that "the Bartlett Pear is the most profitable pear grown in Southern Ohio. The Bartlett, Flemish Beauty, White Doyenné, Swan's Orange, Seckel, and Tyson are the most popular varieties grown as standards. Louise Bonne de Jersey, Vicar of Winkfield, White Doyenné, Belle Lucrative, Glout Morceau, and Flemish Beauty, are the most popular varieties grown here for dwarfs. The Early May Cherry is a certain bearer, very hardy, and is popular because profitable for the market. Knight's Early Black is also becoming more popular, being a pretty sure bearer. Wilson's Albany Strawberry is the most popular sort for field-culture. We gathered ten bushels last season from a piece of land forty by sixty feet, and the crop was much lessened on account of the great mass of plants."

D. W. G., Peoria, Ill. — About my garden are some cherry-trees that have sprung up from time to time; and I wish to know what I had better do with them to make them profitable. — It would, perhaps, be better to wait until they bear fruit; and, if the same shall be good, then preserve them: otherwise graft the trees with some variety that you know is hardy and prolific.

S. T. M., Northborough, Mass. — I wish to learn through your valuable Journal if any of your readers have had experience in raising strawberries on land newly reclaimed from the forest. I have seen large fruit on the native strawberry-vines growing on such land. — We have no doubt but the crop referred to can be successfully grown on such land if it can be made mellow, so as to allow scope for the roots. The fresh soil, with the ashes that may be left from the waste material burned on the land, would all be favorable to the strawberry. We hope to hear from those who have had experience on this point.

C. T. R., Pittsfield. — Neither scions nor trees can be procured of the President Pear. The whole stock is in the hands of the originator.*

J. S. D., Fairview, Ken. — How shall I destroy earth-worms in flower-pots? — Water the plants with a weak solution of lime (common lime-water), made by slacking quicklime in water: a lump as large as one's fist will be enough for six gallons of water. The worms will come out at the surface of the ground. Also many may be removed by carefully turning the ball of earth from the pot: the worms, generally, are found close to the side of the pot, and may be caught before they draw into the ball again.

How shall I prepare apple and other fruit seed for sowing? — After they are washed out or separated from the pomace or pulp of the fruit, mix the seed with moist sand, and place them where they will keep tolerably moist through the winter away from the vermin. In the spring, the seed can be sown with the sand. We have for years successfully followed this course.

* Since the above was in type, we learn that Dr. Shurtleff has been prevailed upon to let out what stock he has now ready of the President and Pemberton Pears, which is limited to one hundred scions of each. See advertising columns.



APRIL.

OLD AND NEW HOMES.

CHAPTER VI.

Mr. Brown. — Vineland. — Choosing a Location. — The Marl-pits. — Marvellous Growth. — Enterprise and Industry. — Good Morals. — Building a House. — Finding Friends. — Ambition at Home. — More Improvements. — Satisfactory Results. — Grape-vines. — Retrospect. — Future Hopes. — Blessings and Advantages. — Contentment.

I HAVE been so much interested in describing our own experiences, that I have quite forgotten to speak about our old neighbor Mr. Brown, who was introduced to the reader in my first chapter. At that time, he was looking about for a location ; and, not seeing any thing near us that entirely answered his purpose, he went a little farther down into the heart of Jersey. The village of Vineland, which has risen like magic, and grown into importance within the last six years, seemed to be the place for him. He was a younger man than my father ; and the new farming-land, which, only a year or two before, had been covered with a thick growth of scrub-oak and pine, was said to be a promising investment for the prospective fruit-grower. This tract was laid off into lots of from ten to thirty acres, with liberal

inducements to purchasers. It is true, the stumps were still in the ground, and interfered somewhat with cultivation; but these could be removed when the virgin soil would be ready for the plough. All around it for many miles were to be found inexhaustible beds of marl; and the railroad intersecting this portion of the State from Camden, opposite Philadelphia, to Cape May, afforded ready transportation to and from the settlement. It would subsequently provide for the marketable productions which Nature seems to have made peculiar to New Jersey, while supplying the principle needed by her soil in these rich deposits of marl. The potatoes, whether round or sweet ones, produced on land manured with marl, are much finer, and command a far better price, than those sent to market from other sections of the country where that fertilizer is not used. These marl-beds underlie a vast extent of land, and it is estimated that a square mile will yield about fourteen million tons. Of course, the farmer in this region can either purchase his marl at a low rate, or buy a right to dig for himself. A pit of a few feet square will yield an incredible amount, and costs only a few dollars. There are some enterprising land-owners who find it sufficiently profitable to do nothing else but dig and ship marl to distant places. During our first year's experiments, my father invested in this native fertilizer, and had reaped rich returns from his potato-fields. About twenty-five loads per acre is the usual allowance for very poor land; but ours did not require so much. An interior railroad brought it to us from the pits in our neighborhood, and delivered it in heaps by the roadside, whence our own wagons could move it to the farm.

But to return to Vineland. To many who read this little history, it will be a new name; and, even to those who live within a short distance of it, the story of its sudden rise and marvellous growth will appear like one of the fairy tales of "The Arabian Nights." But we are telling of facts, not fancies; and let the incredulous reader visit Vineland, and judge of the reality for himself. The town, which now contains nearly ten thousand inhabitants, was laid out only six years ago, in one of the most secluded and desolate regions to be found in New Jersey. It lies in Cumberland County, thirty-five miles below Philadelphia, directly on the Camden and Cape-May Railroad; and is thus in close communication with fine markets for its productions. The entire tract embraced in the original project con-

sists of twenty-five thousand acres of level land, then covered with pines and scrub-oaks, and inhabited only by charcoal-burners and wood-choppers. The enterprising spirit who undertook this grand scheme was Mr. Charles K. Landis ; and when, in August, 1861, he first began to lay out the streets and avenues of his future town, he was ridiculed as a madman. Yet he proceeded in the work, offering the most liberal inducements to actual settlers, and refusing to sell to mere speculators. The tract was laid out into five and ten acre lots in the town ; and outside were to be had larger farms of all sizes, so that various capacities and fancies could be suited. All who came were obliged to build houses, and plant ornamental trees before them, within a year, at the same time observing uniformity by locating at a certain distance from the street. Neat cottages were soon erected, of tasteful styles, yet in great variety ; and within three years there had thus been built a town of six hundred and fifty houses, containing some four thousand inhabitants. At the same time, the projector of the enterprise was busy in opening and grading new streets, building bridges, clearing up the forest, and establishing a multitude of improvements for the general benefit of the settlers. Sites were given for churches, schools, and a public park ; while hotels, mills, and stores sprang up to meet the demand. The growth and prosperity of the settlement exceeded even that of Western towns ; and the mild and favorable climate was all that could be desired for fruit-raising. There was a constant succession of strawberries, raspberries, blackberries, peaches, and grapes. All were busy here ; no drones were to be found : and carpenters and masons found ready employment in putting up new houses for the rapidly-increasing population.

All this was in full operation when our friend went there to look for a new home ; and he was completely astounded at what he saw and heard around him. It was at the close of winter, it will be remembered ; but already many new dwellings were under way. There were fine, substantial churches and schoolhouses, and every thing else that is usual in a town of its size, except rum-shops. Even the hotels had no bars ; for, by a vote of the people, such things were decided to be unnecessary ; and, by a special act of the legislature erecting this tract into a township, the citizens are authorized to forbid the traffic in intoxicating liquors. Perhaps it was this

last-named feature that finally decided our sensible friend : so, after a few days' deliberation, he secured a little farm of thirty acres, partly cleared, and contracted at once for a house to be built upon it within three months. Twenty-five dollars per acre sounded like a small sum for the land, with a fine bed of muck upon one end of it ; and he set himself vigorously to the work of removing the many stumps that encumbered it. There were many others about him engaged in precisely the same employment ; and if the work was hard, and somewhat different from former experiences, he had only to look around him upon his neighbors' newly-planted tracts to feel new encouragement. At the present rate of progress, his land must speedily rise in value. Not a month passed without witnessing the erection of some thirty or forty new buildings. A newspaper was in prosperous existence ; and those who were willing to sell found plenty of purchasers for their improved plantations.

One of the pleasantest discoveries made in connection with his new location was, that nearly one-half of the population constantly coming hither to settle were New-Englanders, attracted by the reports of its mild climate and fruitful soil. Thus our friend found himself at once in the midst of old acquaintances, — persons whose associations and antecedents were identical with his own, with whom he might compare notes, and discuss a multitude of topics.

We heard from him occasionally ; for, as was natural, he was as curious to know how we succeeded as we were to know what he was doing ; and my father found time, even in his busiest seasons, to write occasionally to his friends. Both were too closely engaged to exchange visits : yet we knew that Mr. Brown's new house, to which he brought his family as soon as possible, must be much prettier and pleasanter than our own old affair ; and my mother felt rather desirous that all our embellishments should be added before they came to see us. Even my father, with all his plain ideas, had caught a little of the spirit of improvement, and, much to our delight, announced his intention of turning carpenter himself in order that our new grape-arbor might be arranged and raised before the busy spring-time should again come round. So the lumber was purchased, and hauled into the barn ; and sure enough, after a few days' work, in which my brother assist-

ed, a neat Gothic framework was completed, which formed a covered avenue leading from the front gate to the house, over which the vines, already five feet high, will form a glorious bower when the summer returns.

But our improvements did not end here ; for my father could not help observing how shabbily the paling-fence looked, with the gate so rickety, and swinging on leather hinges. This was soon arranged ; and, much to our delight, a neat New-England fence was substituted for the old eyesore ; and then a coat of black tar-paint suggested a decided idea of iron-work : at any rate, we were as well satisfied with it as if it were really a costly iron fence.

“ Now,” said my mother, “ I shall not be ashamed to show our place to the Browns, or any one else who may come.”

I know, that, when summer returns, we shall have as pretty a lawn and piazza as can be desired. There is a wistaria twined around one of the posts, a clematis at another, and roses for the rest, with several other choice vines ready to be set out when spring arrives. As for our grape-vines, they will probably yield us not only refreshing shade, but also many pounds of fruit. My father intends, also, to set out others along the side of the house, to be trained up as is so often done with fruit-trees. Grapes here are very profitable to those who have undertaken to raise them for market ; and I have heard of persons gathering very abundant crops. Of course, those who devote acres to the cultivation train them upon low, upright frames, and keep them trimmed well at the top. This causes them to throw out lateral branches, from which the fruit is more conveniently gathered ; but, as we set a high value upon the shade as well as the fruit, we shall content ourselves with a smaller amount of the latter, and allow the leafy robbers to spread themselves over our Gothic archway until the branches are thickly intertwined.

As I draw this, our first year's experience, to a close, I feel that we have much cause for satisfaction. We have exchanged one pleasant home for another, with the choice decidedly in favor of the new one. Not that we have forgotten our old friends in New England, and all the pleasant days of auld lang syne, but that our toils are lightened, and our profits larger than ever before. I hope, therefore, that my prudent father, after a few years of careful management, will be able to retire from hard work, and

pass the rest of his life in comfort and ease. Perhaps the day may even come when my own fancied *château* will be built, be it either cottage or castle, and thus my airy dreams be realized, even through these very unpoetic and homely agencies.

In the mean time, the winter passes on with its quiet routine of duties. The children are both availing themselves of the advantages of these long-celebrated Burlington schools, and the home circle improves its mind and manners in the congenial atmosphere of books and periodicals from an excellent city library. On Sunday, the air is full of the music of church-bells, and the privileges of the gospel are offered to all who choose to attend the places of public worship. So we are richly favored in many ways ; and, as we conclude our first year's experiment in New-Jersey farming, we give our willing testimony for the benefit of those who are hesitating about removal. Last year, we had many doubts as to the wisdom or propriety of our venture ; but now we have no regrets or disappointments to record.

BURLINGTON, N. J.

H.

EFFECTS OF CLIMATE AND SOIL ON THE ROOTS OF TREES.

(Concluded.)

WE have seen that the roots of all trees, conifers not excepted, run down into the subsoil, and appear to draw their greatest amount of nourishment from that source : hence we can run the plough close to their trunks without damaging their roots. This natural provision is necessary to their preservation from the frosts of winter and the long drought of summer : for here we have no snow-covering ; and, being distant from large bodies of water, the evaporation from the surface is immense. Now, to insure drainage at no extra cost, we are at liberty to plough our orchards into lands ; that is, between the rows, we may plough towards the tree as long as we please, without either disturbing the roots or injuring the soil. In my own grounds, in some cases, I have thrown out the soil in the centre by repeated ploughings to the depth of two feet. In the first instance, this was done to drain the more level part of the orchard ; but, by repeated experiments, it is found that the highest and best drained portions of the orchard are

also much improved by the process. The land is thus thrown into seed-beds, and, being thoroughly drained, becomes friable, and admits the air and the falling rain, which run through to the open dead furrows. I do not pretend to say that this is equal to tile-draining; but as tile-draining is expensive at present, and as this system of culture costs nothing extra over the ordinary expense of ploughing, it might be put into immediate practice. Even with tile-draining, I am not sure that this system of seed-beds, or back-furrowing to the trees, is not advisable. In all heavy clay-lands, it certainly would be; and it is commended with the most entire confidence to the orchardists in the Basin of Egypt, as well as to other parts of the State. By this system of ploughing, we shall relieve our orchard-trees from stagnant water in rainy seasons, and give them the benefit of moisture from below in dry seasons; for with a friable, finely-comminuted surface, the evaporation is less rapid, and the moisture will be retained for the use of the trees.

If we go into our vineyards and small-fruit gardens, we find the habit of these partake of the same general character,—a downward tendency of the roots. We have often failed in the culture of these, from fear of injuring the roots by running the double-shovel plough close up to them; when, if we had boldly made the experiment, it would have given them deep, thorough culture, which, acting like a mulch, would have held the moisture in time of drought, while all excess in wet seasons would have filtered out to the dead furrows, thus giving us, to a great extent, the benefit resulting from tile-draining. Rows of currants, raspberries, gooseberries, and blackberries, could be ridged up in a similar manner as directed for the orchard; and great benefit would result therefrom. In planting our orchards, care should be had to set the rows in the direction of the drainage. In one corner of my orchard was a small basin, in which water stood at times. This was slightly ridged up, so that no water stood on the surface, and the rows of orchard-trees continued through it: but the roots, striking downwards, stood in the stagnant water below the surface; and, in three or four years, the trees died. Not being pleased with the idea of having a vacant patch in the orchard, and not wishing to be at the expense of tile-draining, the dead trees were replaced with new ones, and the land thrown out to the rows by repeated ploughing, so that the dead furrow was

at least three feet below the surface at the base of the trees. These trees have made vigorous growth, and produce annual crops of large, perfect fruit. In fact, this experiment confirmed me in the practice of thus ploughing my orchard, not only to induce growth of wood, but to insure annual crops.

In the orchard may be found rows on the flat-culture system, ranging to this deep trenching as above described; and in no case has a root been cut with the plough, and yet the ploughing has been done as close to the bole of the trees as possible.

In a visit to the large orchard of W. C. Flagg of Madison County, I found it the practice to plough close up to the trunk of the trees; and, to enable him to do so, the trees in the old part of the orchard, eight to twelve inches in diameter, had been pruned to a height to allow the team to pass close to their stems. In the new orchard, low heads and the ridging process is the rule. In Adams County, Mr. Clark Cholton, a very extensive and successful orchardist, cultivates his trees by ploughing close to them.

It will thus be seen, that, at the West, sudden changes from heat to cold, from heavy rain to long parching drought, cannot have a serious effect on the roots of trees, from the fact that they run deep into the soil, and are thus beyond the reach of these influences. On the other hand, the open winters at the East, caused by clearing away the forests, more especially the hill land, expose the roots of trees that grow near the surface to sudden changes, and thus injure them. While tile-draining is there an absolute essential to success at great cost, here we can meet the difficulty in a more cheap yet equally efficient method.

Had our forest and fruit trees the same habit of root-growth as in the maritime and snowy districts, we should be without forests and orchards, unless we protected them at great cost by artificial means. In both sections, man has made almost permanent changes in the hygrometric condition of the climate; and it is now for us to study their effects, and to turn them to our use.

To make our orchards the most productive, we must study the soil as one of the first elements of success. When we fully understand this, we have the key to many of the minor details that have often perplexed us.

THE BOUVARDIA.

THESE pretty and popular plants, natives of Mexico, are alike useful in



the garden in summer, or the greenhouse in winter. They are among the few flowers which are indispensable both to the amateur and the florist.

In brilliancy of color, they have no superiors ; and, in one species, the delicate white flowers are pleasantly fragrant.

There are not more than half a dozen species in cultivation ; but many varieties have been obtained by skilful hybridization, some of which even excel the species in beauty.

The general color of the flowers is scarlet : but we find exceptions in *B. longiflora*, which has white flowers ; while in *B. flava*, as the name implies, the blossoms are yellow. Hybrid varieties also show in their flowers all the various shades between these colors.

The species generally grown are *B. longiflora*, with white flowers ; *B. flava*, with yellow ; and *B. triphylla*, *splendens*, and *leiantha*, all with scarlet flowers.

Of these, *B. longiflora* is by far the most beautiful. The plant is a dwarf, bushy shrub, with clear glossy foliage, and few flowered terminal corymbs of clear waxy-white flowers. The individual blossoms are tubular, larger than a white jasmine, and not as large as a single tube-rose, exquisitely fragrant, and very beautiful.

The flowering season is generally in winter ; but, by a little attention, we have had a succession of plants coming into bloom at all seasons. The plant requires only common greenhouse-culture, and would doubtless bloom under parlor-culture ; though we cannot say this from experience. Attention must be given, however, to prevent the soil becoming sour or sodden ; and the pots should always be well drained. The proper soil is rich leaf-mould and silver sand, or light, rich, fibry loam.

B. flava is by no means a showy species, and is seldom grown, but is worthy a place in a collection. The flowers are yellow and very pretty, produced in summer.

B. splendens is also a summer-bloomer, and has bright-scarlet flowers : it has, however, been thrown into the shade by other and better species.

B. leiantha is probably the species most generally grown, as its bright-scarlet flower and winter-blooming qualities universally recommend it. The plant is about a foot high, bushy, very free-flowering, of good habit, quick growth, and generally healthy, not very particular as to soil, and blooming even if neglected. For cut-flowers it is invaluable, as it comes when flowers are most in request, and combines brilliancy of color with elegance of shape.

B. triphylla is the best for summer-bloom, and, as a bedding-plant, is better than any other species. The flowers are orange-scarlet, very showy and attractive.

Of hybrid varieties there are many which are worthy of notice, although as yet but little attention has been paid by hybridists to the *Bouvardia*. The plant promises well, and the next few years will probably witness a great advance.

The subject of our illustration is a step in this direction, and is a new seedling *Bouvardia*, to which we take great pleasure in calling the attention of our readers. This attractive variety was raised by Mr. John Henderson, and is a sport from the well-known carmine variety Hogarth. It has been named, in honor of the producer, *Bouvardia Hendersonii*. It promises to be an even more abundant bloomer than the parent. The flowers are produced in branching terminal corymbs, as in the varieties of *B. leiantha*; the tube is long, full, and well rounded; the petals large, of great substance, of a delicate rosy peach-color; the foliage is dark-green, not smooth, clear, and fine. In habit the plant is vigorous and healthy, very floriferous, and winter-blooming.

The color is one which has long been wanted for bouquets, as it harmonizes well with any other color.

Altogether it is an admirable variety; and we cannot but regard it as a great acquisition, which we trust may soon be so generally grown as to become indispensable for choice bouquets.

Bouvardias are propagated by cuttings of branches or roots, and by seed; the two former for the perpetuation of old species, the latter for the production of new varieties.

Cuttings should generally be made in spring, and should be from half-ripened shoots taken off at a joint. They should be inserted one-half their length in silver sand or in sandy loam, and have a slight bottom-heat. They root readily, and may soon be potted off.

Propagation by root-cuttings is chiefly used with *B. leiantha* and its varieties. The roots should be cut into pieces about an inch in length; planted about an inch deep in a pan of sandy soil, which should be placed in a brisk bottom-heat. The plants will soon appear, and in a few weeks be strong enough to pot off.

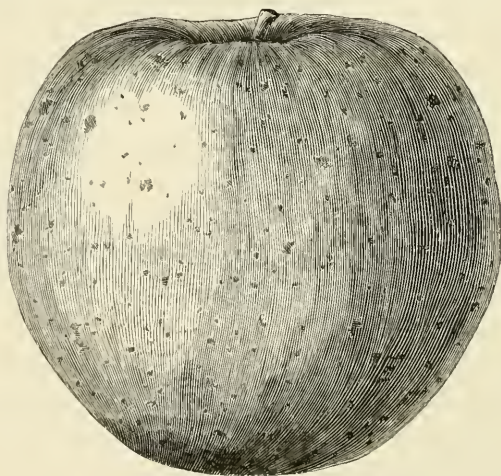
Seed may be sown at any season in sandy loam : it vegetates more freely if placed in bottom-heat. The plants intended for winter-blooming should be bedded out in summer, and be well grown. Just before the frost comes, they should be potted and placed in the greenhouse, where they will soon come into bloom.

E. S. R., Jun.

GLEN RIDGE, March, 1868.

GRIMES'S GOLDEN PIPPIN (SYN., *Grimes's Golden*).

THE first publicly known of this apple was at a meeting of the Ohio State Pomological Society in September, 1855, where it was shown by Samuel Wood and Son of Jefferson County, O., and who then gave its origin as having been on the farm of Thomas Grimes, Brook County, Va. This was published, with a condensed description of the fruit, in the Ohio



Transactions. The soil of the parent tree was sandy ; but experience with it has proved that it does equally well on rich clay-loam as on sand. It is claimed by those who have been in yearly acquaintance with this apple, that, almost from the time of its first bearing, — now about seventy years, — it has never failed to produce fruit : not even the severe frost of 1859, which

destroyed almost every thing beside, prevented this tree from perfecting its crop of fruit. The young trees have been considerably disseminated ; and, wherever grown, the hardihood and perpetual bearing of the parent tree seem to have been continued. The tree is of a moderately vigorous growth, forming an upright spreading head in the orchard ; its branches or limbs being very tough, and having knobs or abutments, as it were, at the base of connection with the main branch, which enable it to sustain severe winds or heavy loads of fruit without breaking or cracking off. The fruit is uniformly even and regular in form and size ; and, although fit for eating or cooking early in winter, may be kept without extra care until March or April.

Description. — Fruit, size medium ; form roundish, oblong, oblate, conical ; color rich golden-yellow, with sometimes a shade of bronzed-red in the sun, and moderately sprinkled with small grayish dots ; stalk varying, sometimes medium or short, and again, when grown on the lower outer buds of the tree, rather long and slender ; cavity deep, often slightly russeted ; calyx partially closed ; basin deep, rather abrupt and uneven ; flesh yellow, compact, firm, crisp, tender, juicy, rich, brisk, aromatic, sub-acid ; core small ; seeds ovate ; quality best. Season, December to April.

NEW APPLES.

A GREAT number of new apples have been introduced in the Middle and Western States during the past few years ; while doubtless many varieties, if not an equal number, have been practically forgotten. Those intending to raise fruit for the market should plant but comparatively few varieties, and those only that have been fully tested and found to be productive and profitable.

PEACH-TREES IN POTS.

THE general opinion among fruit-growers is, that, when the mercury falls as low as ten degrees below zero, the fruit-buds of the peach will be killed. This may not be strictly true : but it is true that the peach often fails when the winters are severe ; and this repeated failure has led many persons to abandon the culture of this most luscious fruit. Now, there is not, perhaps, among all the fruits that can be grown in a Northern climate, one more generally esteemed and admired than this ; and the question is often asked, How can it be raised where the winters are so unfavorable ? We would suggest growing them in pots or tubs, and placing the tubs in a house or warm barn-cellar in winter, where they will be perfectly protected from the severe weather. This cannot be done on an extensive scale, perhaps, or in such a way as to yield a profit, but may be, to some extent, by every lover of this fruit, to supply his own table. We take great pains to raise grapes and other fruit under glass ; and why not take some trouble to raise peaches in this way ? The expense is not large : for, if earthen pots are used, they will last many years, and serve for several generations of trees ; or a cheaper article can be made to answer the purpose. The large size iron-bound white-lead kegs, sawed in two, make very good tubs for this purpose ; and even the light Malaga grape and raisin casks will last as long as one set of trees can profitably be kept. Each tub or pot should hold about three-fourths of a bushel of good earth and compost well prepared. The trees may be set in the spring, the roots shortened, and the tops well cut in ; and, if they are in pots, the pots may be plunged in the ground in some position not too much exposed to the hot sun the first year. They will need to be watered once in a while, but not nearly as often as those not so treated. If they are in tubs, they cannot be put into the ground, because of the danger of rotting the wood, so that they would not last long enough for even one set of trees. When they have made a fair growth, the shoots should be pinched in for a double purpose, — to have them ripen up their wood, and also to cause them to form fruit-buds for the next year ; for they ought all to produce some fruit the second year after being planted. They may require several successive

pinchings-in during the season. They should receive an occasional watering with manure-water, especially the second and successive years, when they are carrying a crop of fruit. On the approach of extreme cold weather, say about the last of November or first of December, take these pots or tubs up, and place them in some good cellar where they can remain all winter ; requiring no care beyond an occasional watering, if the cellar be very dry. Care must be used in setting them out in the spring ; for it sometimes happens, that, even after all the trouble of housing them in winter, they are set out only to have their blossoms or fruit all destroyed by a late frost. When they are ripening their fruit, they should be exposed to the sun, that the fruit may be high colored and fine flavored. We have often seen two or three dozen beautiful specimens of fruit on such trees. It is not best to keep one set of trees more than four or five years. All the varieties may be grown in this way ; though the dwarf varieties, such as Van Buren's Golden Dwarf and the Italian Dwarf, are better adapted to pot-culture.

This system is recommended to amateurs who are fond of peaches, and are willing to make special efforts to secure good specimens. We advise a fair trial of peach-trees in pots in those parts of the country where the winters are too severe to permit of their being raised in the orchard with success.

HEADING IN PEACH-TREES.

THIS important work should receive early attention. There is a very great difference in the appearance at least between those trees that have been shortened in and those that have been left to themselves. The trees so treated live longer, are broken down less by the wind, produce larger and better fruit, which is more easily gathered than from the trees grown by the old method.

GRAPE-CULTURE.

(Continued from the October Number.)

IN my last article, some of the evils resulting to the vine from over-bearing were stated ; and, as I regard a full understanding of this subject as most important, I will devote a portion of the present paper to its further consideration.

It has been shown that a vine under culture has its energies abnormally directed to the production of fruit-buds ; and that, in this condition, all productive varieties are disposed to form more fruit than the vine is able to mature. The first and great object of the vineyard is perfect, well-ripened fruit ; secondly, strong, well-matured wood for the next season's bearing. Now, if the cultivated vine be permitted to bear all the fruit which forms in the spring, as a general rule, neither of the above objects will be attained.

From a somewhat extended observation of Catawba vineyards in that favored region about Sandusky and the adjoining islands, it seems evident that many of the ills to which the Catawba grape is subjected are greatly aggravated, if they are not caused, by over-bearing. In newly-planted vineyards, especially in their first bearing-year, rot or mildew rarely appears. If the vines are vigorous and healthy, and the first crop has been a moderate one, the second bearing is usually healthy also. But, if the second crop is too heavy, the fruit will, in consequence, be more or less immature, and the wood imperfectly ripened ; and the succeeding year the vineyard is in condition to invite attacks of rot and mildew, and failure to greater or less extent is pretty sure to follow. Though these observations are made upon the Catawba, they are equally applicable to other varieties ; for while some kinds, like Concord, Hartford, or Ives, by reason of their greater vigor and hardness of constitution, may be less affected, others more delicate, such as Allen's Hybrid, Iona, or Diana, would probably suffer to a greater extent.

Healthy, well-developed, and abundant foliage is absolutely necessary to the perfect ripening of the present crop, as well as to the formation of perfect wood and fruit-buds for the succeeding year ; and he who so studies

the habits and capacities of his vines as to maintain such a state of harmony between the crop of fruit and the growing wood, that both arrive at healthy and perfect maturity, will achieve the greatest success in grape-culture of which the art is susceptible.

Mildew, or *oidium*, upon the foliage, and rotting of the fruit, are the two great difficulties with which the grape-grower has to contend ; and, most unfortunately, our finest grapes seem, as a rule, most liable to their attack. It must also be confessed that their causes are still somewhat obscure, and that no positive remedies for either have yet been discovered. Theories based upon one or two years' experience are very apt to be disproved by that of the next ; and many of our oldest vineyardists find themselves, after years of observation, in the condition of the honest German vine-dresser, who announced in reference to this subject, that, " the more he studied, the more he didn't know."

Of the two, *oidium*, or mildew, seems best understood. It is a parasitic, fungoid growth, which first appears in small white patches upon the under side of the leaves, with corresponding brown, discolored spots upon the upper side, extending sometimes also to the petioles and the young and tender shoots. If not checked, it soon covers the entire under-surface of the leaves, feeding upon and destroying their natural functions ; its effects also pervading and impairing the vitality of the whole vine.

It is generally conceded that the application of sulphur is to some extent a prevention of, if not a specific for, this evil. My own experience indicates, that, to be effective, it should be applied early,—either before or during the most rapid growth of the vine ; for it has invariably resulted, that vines to which it was applied at this time either entirely escaped, or suffered much less from mildew than those to which no application was made, or where it was delayed until the disease had made its appearance. I have usually employed the sulphur in combination with one-half or one-third quicklime in fine powder ; and the most convenient mode of applying it which I have found has been by the use of a bellows, a drawing of which I append, and upon which there is no patent. It is simple in construction, and very effective. By its use, a cloud of sulphur and lime can be distributed among the vines along a trellis nearly as fast as one would naturally walk. I have sometimes used pulverized gypsum, or sulphate of lime, in place of quick-

lime, but without any apparent difference in results. I have usually found two applications all that was necessary in one season,—one about the time of development of the first leaves in spring; and the other near the close of the strongest growth of the vine,—from the middle to the last of July. This latter period is the time at which the *oidium* usually makes its appearance; and if the weather is such as to materially check the growth of vines by sudden alternations and low temperature, or by excessive cool rain followed by hot sunshine, its effects are greatly increased, and the

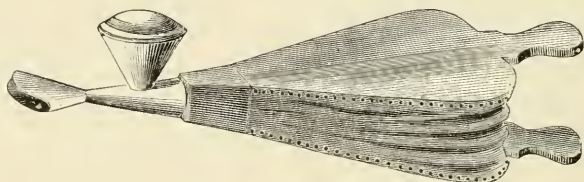


Fig. 1.—Sulphur Bellows.

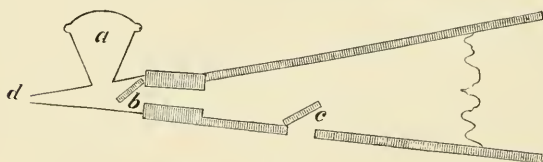


Fig. 2.

- a.* Reservoir for sulphur, with three or four holes leading into the escape-pipe *d*; part of which may be closed with plugs, if necessary.
- b.* Small valve opening outward, and which prevents sulphur from getting into the body of the bellows.
- c.* Air-valve.
- d.* Escape-pipe flattened laterally, spreading the sulphur as it escapes. Escape-pipe and reservoir made of heavy tin.

disease sometimes spreads with astonishing rapidity. Upon vines enfeebled by an over-burden of fruit or other causes, the leaves often all fall prematurely, leaving only unripe fruit and green wood which can never mature. The primary cause of *oidium* is still somewhat obscure; and it does not appear to be definitely settled whether it is a cause of disease, or the effect of a previously existing unhealthy condition. My own observation inclines me to belief in the former supposition; for, in the atmospheric conditions most favorable to its manifestation, vines in apparently perfect health and vigor are by no means exempt from its attacks. In dry, warm seasons, in locations of equable temperature, it has within my observation rarely appeared; while in wet seasons, especially when marked by great variation of temperature, it almost invariably prevails.

It has been supposed by many that *oidium* attacks only the cultivated varieties, and that it is one of the evils incident to the artificial condition of the cultivated vine. But I have seen the wild grape, *Vitis astivalis*, in its native habitat, as badly affected as any of the cultivated varieties ; and upon one occasion, when I had transplanted some wild vines from the woods into my garden as stocks for grafting, they exhibited more mildewed foliage than any of the cultivated kinds.

The cause of grape-rot is even more obscure than that of *oidium* ; for, while the same influences that seem most favorable to the growth and spread of *oidium* appear also to increase the tendency to rot, it is nevertheless true that either of these evils may and often does occur without the appearance of the other. And while several of the more hardy and robust of our native varieties, such as Concord, Ives, Hartford, and some of Rogers's Hybrids, seem under ordinary circumstances, and in most localities, exempt from either, others less hardy, as Diana, Catawba, and Iona, are often, in unfavorable seasons, badly affected by rot without much appearance of mildew, and at other times by both at once. Another class, usually those of smoother and more delicate foliage, such as Delaware, Creveling, and Clinton, in some localities suffer from mildew, but rarely, if ever, from rot. I am not aware that any remedy beyond what may be found in intelligent and careful culture has ever been proposed as a preventive against rot ; and, in the present state of our knowledge upon this subject, I have nothing beyond this to recommend.

In reply to the friendly criticism of "*Barachel*," in the November number of the Journal, I will say, that, in these articles, my statements are made in a general way, as the results of my own observation and experience, and are intended to be suggestive rather than authoritative. It may be that my remark, that any soil that would produce a good crop of corn would also produce good grapes, will admit of some modification : still I believe in its general correctness. And, though the extent of territory in which grapes of the highest wine-producing character can be grown is probably quite limited, grapes of fair quality for both table and wine purposes can be and are produced over a pretty large extent of our country : and I believe there is no region where a good crop of Indian corn can be produced, that grapes of the cosmopolitan character of the Concord and Hartford

Prolific cannot be successfully grown ; in most instances also, Delaware, Creveling, Norton's Virginia, and Clinton ; and, when the season is long enough to permit them to ripen, the Catawba, Iona, and Diana. I may hereafter refer more at length to this subject in noticing varieties, and their adaptation to particular localities.

As to the question of protection by covering vines in winter, it is, of course, attended with additional labor and expense ; but he who expects to cultivate a vineyard successfully, and attain the most profitable results, without a pretty large expenditure of both, will meet with disappointment. The trouble attendant upon this practice is, however, often much exaggerated. If the vines are planted inclining in the direction toward which it will afterward be most convenient to lay them down, and, when training upon trellis, care is taken to tie them all upon the same side, it will be comparatively easy to lay them upon the ground after pruning. Then a few inches of earth thrown upon the canes will afford ample protection. An intelligent and extensive vine-grower has assured me that he can protect a vineyard in this manner at an expense of from five to six dollars per acre. I have also seen a statement by a large fruit-grower, who protected a part of his vineyard, and left another portion unprotected, that the difference in favor of the protected vines was so great, that it would have paid him at the rate of a hundred dollars per day for the additional time required, if he had covered the whole.

In some localities, many desirable varieties can be had in no other way ; and when the question is, whether we shall do without grapes, or give protection, I think the additional labor will be cheerfully incurred. Or, if we can convince our vine-growers that it will "pay," there will be no longer any serious obstacle in the way of its adoption. I will add, that, so far as I have had an expression from those who have practised winter-protection, it has received unanimous and decided approval, even when applied to varieties usually considered perfectly hardy. *George W. Campbell.*

DELAWARE, O.

HOW A SMALL FARM WAS MANAGED.

THERE are many men, young and old, who are looking forward to the time when they shall own a farm ; while there are many others who have succeeded in obtaining farms, but are none too well informed as to their management. There has been for years, and still is, a growing interest in fruit-culture, and especially in that branch of the business connected with growing the small fruits. This interest has extended to all parts of the country, East and West. A few years ago, grapes were produced in very limited quantities ; while now there are millions of vines in the country. The same is true of most of the small fruits. It is very evident, that, with this state of things, there must be many in the community, who, though they wish to enter upon the business of fruit-growing, yet lack the knowledge requisite to insure success. Such persons may possibly gain some information from the description, in detail, of the management of a small fruit-farm in the vicinity of an Eastern city. We shall not forget the vegetables as we pass along ; for every one living on a farm should at least raise enough of these for his own use, if he does not wish to supply the market.

Selection of Location. — This was one of the most important things to be done, and it required much time and the examination of many farms. Failing to get just such an estate as we had pictured in our imagination, we took that which came the nearest to it. As our principal object was the raising of fruit for the market, we selected what is termed a rather strong, moist soil, with here and there stones and rocks ; the land somewhat rolling, with a general inclination to the south-east and south ; the soil a rich, dark loam, with a yellow, gravelly subsoil, and that resting on a hard pan of blue gravel almost approaching clay. One of the very first things to be done was to drain several acres intended for fruit-culture. Trenches were dug two to three feet deep, and about fifteen to twenty inches wide, in which was laid drain-tile to a considerable extent ; while in other drains stones were used such as could be gathered from the land, and so laid as to leave a small channel for the water : over these stone-drains, hay, shavings, small brush, or something of that sort, was laid, to prevent the soil from working down to obstruct the drain. In other cases,

thin slate-stones were used, placing the ends on the hard pan, and meeting them at the top. Then some rubbish was laid over these drains to prevent them from becoming clogged. All these drains emptied into a main drain or brook where water was running a large part of the year. This land had been principally devoted to grass, either mowing or pasture ; and was in a rather low state of cultivation. After the drains were all laid, which was a laborious and somewhat expensive job, the ditches were all filled, except the main one, the land levelled and ploughed, the stones picked off, and many rocks removed by blasting. The first year the land was well manured, and planted mostly with vegetables. Early potatoes were raised quite extensively, with other crops, all of which matured early, and gave us time to prepare for the autumn-planting of the trees, bushes, and vines, to which the land was mostly to be devoted. The whole farm consisted of forty acres, only about twenty of it being suitable for fruit ; the remainder pasture and wood land. Large quantities of manure had been drawn from the city to enrich the land, which had been skinned for years. Four acres of the land were devoted to pear-trees, dwarfs and standards, — about an equal number of each. These four acres received a liberal dressing of manure, — ten cords to the acre, — and a thorough stirring of the soil with a plough running ten to twelve inches deep. The dwarfs were set on that part of the lot where the soil was the deepest and stiffest. They were set in rows ten feet apart, and six feet apart in the row. They were well headed in, and set so that the quince-stock would be an inch or two below the surface. The standards were set out in rows fifteen feet apart, and the trees fifteen feet apart in the row, breaking joints so that trees in adjoining rows would not come opposite each other. We thought there could be no better way than this to make the best use of all the land ; and our subsequent experience has fully justified that opinion. Before setting the trees, we headed them in well, and cut off smoothly the ends of all the large roots. On the near approach of winter, we turned up a furrow each side towards the trees. We then marked off two acres, which we manured less liberally than we did for the pears ; and this lot was to be devoted to currants. The plants were one year from the cuttings, and of the best varieties ; and were set in rows eight feet apart, and the plants three feet in the row. This would allow room for a horse-cart or wagon through the rows

whenever it was necessary to cart manure about the bushes, which should be done at least once in three or four years. After the bushes were planted, a furrow was turned up against them from each side.

Two acres were to be devoted to raspberries,—a fruit that we felt had been neglected: but we preferred to set these in the spring; and so we decided where to have them, measured the land, and left it. The blackberry-patch of one acre was chosen from the very best land, and received a high manuring; but the setting of the plants was deferred until spring. The five acres to be devoted to strawberries were well manured with horse-manure and ashes, at the rate of four hundred dollars' worth to the acre, or about thirty-two cords to the acre. While this may be regarded as heavy manuring, we have known our neighbors to apply a still greater quantity. This dressing was ploughed under, that nothing might be lost. The two acres intended for grapes were the very dryest and poorest part of the farm, near the top of a hill, sloping south-east, with natural drainage so good, that we did not deem it necessary to put in tile-drains. We manured the land, and put up trellises and posts ready to receive the vines in the spring. These posts or stakes were about eight and a half to nine feet long, and went into the ground about two and a half feet. On these posts the weaker-growing kinds were to be trained spirally. The trellises were of wire; and the rows, either of posts or trellises, were eight feet apart, and the vines four to six feet apart in the row. All was ready for setting the vines as soon as the land was in condition to receive them the next season. Winter was now upon us, and we made preparations to draw a large quantity of meadow-muck and horse-manure; for, without plenty of good dressing, it is of little use to attempt to run a farm. This is not true at the West, where the land is naturally so fertile, and the crop needs no such stimulus. The time, however, must come when even such lands will be benefited by the application of dressing; and we should think it the part of wisdom not to waste it. In November, and early in December, the hot-beds were put down to raise early lettuce for the market. A large quantity of manure was required for this, and much time was spent; but nothing that we did paid better. The entire crop of seven hundred dozen averaged a dollar a dozen; so that we realized the nice little sum of seven hundred dollars for this one article. This any person may do who is acquainted with the raising of this

crop. Many farmers raise very much larger quantities. During the latter part of the month of February, we prepared our beds into which to transplant the small tomato-plants that had been growing for some weeks in the seed-bed. The care of our hot-beds, with the other necessary work, took the time of two men besides myself. The opening of spring found us well prepared for the work we had laid out to accomplish. The large piles of manure and muck were to be thrown over and pulverized before being used, a few early pease sown for family use, and soon the ploughing of the land that was to be devoted to strawberries. This was not a great work, and we were soon ready to set the plants. The varieties used were mostly Hovey's Seedling, Wilson, and Brighton Pine. The rows were four feet apart, and the plants in the rows some three or four inches, except the Hovey's Seedling, which does not make runners so freely as some, and hence were set in double rows. After the six acres were set, we ploughed between our pear-trees, both dwarfs and standards, where the land had been well manured, and set out strawberries there,—two rows of strawberries in the space between every two rows of standard trees, and one row of strawberries between every two rows of dwarfs. Then came the planting of the raspberries, which were set in rows some four feet apart, and the hills or stools three feet apart. The varieties set were Franconia for market, and the Brinckle's Orange and Knevett's Giant for home use. The blackberries were the next thing to receive our attention. The Lawton and Dorchester were planted. The rows were put about six feet apart, and the plants some two to three feet apart in the row. The next year, stakes were driven each side of the bushes about three feet high, and wires run along the top of these stakes to keep the plants in place. We had not forgotten all this time to make arrangement to raise the necessary vegetables for the use of the family; for next to fruit on a farm comes the luxury of fresh vegetables. The asparagus-bed was one of quite respectable dimensions; for we had the impression, which afterwards proved to be correct, that this was one of the most profitable of crops when it succeeded well. Our land was rather too heavy, as it seems to flourish best on a light, gravelly soil. The two acres that we devoted to this crop received a good dressing; for, as will be seen, we were willing to spend freely for manure, believing that it was money well invested. We run a plough making a deep furrow every

four feet ; and, after furrowing as deep as possible, we used a shovel to deepen the furrow to the depth of ten or twelve inches. Strong one-year-old plants were then set out about ten inches apart in the trench or furrow, and covered to the depth of three inches with fine earth drawn in with a hoe. This received repeated hoeings through the summer, each time filling the trench a little ; so that, by fall, the furrow was entirely filled and the surface level. The grape-vines were not forgotten. Strong one-year-old plants of the most approved kinds for market-purposes were obtained, such as the Concord, Hartford Prolific, Delaware, and others, cut back severely, and planted. A portion of the land devoted to vegetables had been set apart for the tomato-plants we had been so tenderly rearing ; and the land was deeply ploughed, and manured in hills, which were made some four feet apart each way, and covered ready to receive the plants when all danger of frost was over. The remainder of our ground was well manured, and planted to such vegetables as were best suited to our wants. We had now got fairly through planting, and were ready for weeding and the other work that would soon be upon us.

(To be continued.)

PLANTING GRAPES.

WE do not advise the planting of the strong-growing varieties of grape-vines to single stakes or posts. The Rogers 15, which has proved a success where it has had plenty of room, has nearly failed when trained spirally to a post. Other rampant growers require the same treatment, and should have space. Plant, if possible, those varieties that have most successfully withstood rot and mildew, — the two great hinderances to profitable grape-culture.

THE HARRISON POTATO.

THIS is another of Mr. Goodrich's Seedlings, and as a late or winter variety, all things considered, is one of his best, surpassing even the Early Goodrich in productiveness, and, like that popular variety during the past unfavorable season, was not affected by the rot in the least; while the Jackson White, Sebec, and other varieties on the same ground, were almost a total failure.

Mr. Goodrich commenced his experiments with a view to improve the potato by planting the seed of the wild Peruvian, from which many thou-



sands of seedlings were raised, and several excellent varieties obtained, one of the most valuable of which was the Cuzco; and its progeny are the Early Goodrich and Harrison.

In size, the Harrison is somewhat larger than the Early Goodrich; smooth; skin and flesh both remarkably white; always solid to the heart; eyes full on the surface; quality as a table-potato superior. It is a strong and vigorous grower, and requires plenty of room and generous culture.

Its handsome appearance, excellent quality, productiveness, and freedom from disease, will make it the most profitable and certain late variety now

under cultivation. I would call the attention of cultivators in the East to this variety, as being a potato especially adapted to their wants ; and have no doubt, that, so soon as its merits become more generally known, it will become the popular and standard variety with them. C. N. B.

TOWN AND COUNTRY.

" Happy the man whose wish and care
A few paternal acres bound,
Content to breathe his native air
On his own ground."

THE newspapers of New York inform us, that, in that city, there are thousands of idle men vainly seeking employment. One of them exhorts the surplus population to disperse, saying that the world does not need so many clerks and salesmen, book-keepers and music-teachers ; there being too many persons in the cities, and too few on farms and in rural workshops. Thus numbers are compelled to eke out a scanty living, while others undergo privations of body and mind which make existence one long and agonizing struggle against absolute starvation. The advice to all these is to disperse, to go into the country, to get land ; but, anyhow, to go into the country. The great city referred to has undoubtedly become the most expensive place of residence in the civilized world. Many families pay ten thousand dollars a year for board alone ; and tenants are practically working exclusively for the landlords, for rents have gone up to frightful figures. Marketing is on the most extravagant scale. Every year, hundreds of families abandon the city in disgust for some suburb which turns out to be quite as expensive as a residence, with the additional annoyance of being an hour or two *in transitu* between counting-house and home.

It is just in such times of business-depression in the great cities, or when prices of the necessities of life rule extravagantly high, that multitudes become desirous of dispersing by removal to the country, and of acquiring a small tract of land which they can call their own. No matter if it be but a single acre, it will be to them a farm. They are worn out with the battle of a city life ; and, with the residuum of former affluence, seek to

secure a moderate living, so that it be a sure one. They argue that the earth produces the very food for which they pay so exorbitantly in the city ; and that that business, at least, is not overdone. Their land will certainly yield enough for family consumption, with something over for the grocer and the butcher. Of the high-priced fruits, of which in the city they rarely ever had enough, they now see unlimited abundance in the glowing future.

No wonder that seasons of financial difficulty drive multitudes into the country. Land is still amazingly cheap at points within a few hours' travel of the best markets in the world ; but it cannot always continue so. Population doubles every twenty years ; but no one can double the number of acres. Immigration pours in upon us, much of it dispersing in pursuit of land. Hence it must certainly become dearer. It would be wrong to counsel the man of moderate capital to run deeply into debt for land, unless it will immediately produce something toward maintaining him ; but he is wise who manages to become the owner of some spot of earth, even if it be held in reserve for future occupancy.

Men thus breaking away from city life will sometimes realize their utmost expectations, while others will utterly fail to do so. Most of them expect too much ; neither are they sufficiently patient. Our plants grow slowly, and some require years before showing fruit. This contrasts strangely with the fast life they have been living under the gas-lights. Instead of so tardy a realization, they expected an immediate return. Some begin with insufficient means for what they undertake : they buy more land than they can manage, and reserve too small a working capital. Embarrassment in some form is the consequence ; and discouragement and abandonment follow, sometimes resulting in actual loss. One year ago, a young man came fresh from the city, and purchased a very desirable farm of thirty acres of most superior soil, with genteel buildings, and farm-appliances complete. He selected his location with judgment, three miles from this city, and about one from railroad station. The land was more extensively stocked with standard fruits than any similar tract for many miles around ; and fruit was to be the new owner's specialty. There were over thirteen hundred standard trees of the choicest varieties of fruits, all in full bearing. His seven hundred pears and apples had yielded to the former owner some prodigious

gious crops. All that was required to make this an absolutely perfect fruit-farm was the planting of a dozen acres of berries. Some of these the enthusiastic owner proceeded to set out. The plants thrive well ; but the season proved to be rainy beyond all former experience in New Jersey, and the entire product of this his first year was so meagre as to entirely dishearten him. He had lived too long on the pavements and under the gas-lights to understand that every season is made up of varying vicissitudes. He had relied on rich returns as being immediate and sure ; in fact, he had expected too much. His moderate working-capital was exhausted, and he now turns round and desires to sell. That accomplished, he goes back to the gas-lights, not ruined, but, though with a magnificent establishment in his hands, disheartened by the losses of a single unfriendly season. Under as active a manager, if possessed of greater working-capital, the result would satisfy any reasonable ambition.

If this were called a failure, the term would be a misnomer. The same long-continued deluge swamped the crops over a large extent of country. But though loss was in many cases the result, yet it was not disheartening ; for there was the sustaining power of sufficient capital to fall back upon. Others, even with abundant means, have every thing to learn. Of small things which sometimes decide the question of success or failure, they know nothing : hence they lose time and opportunity, and the expected profit fails to appear. Practice is to make them perfect ; but practice requires time. Their neighbors gather uniformly good crops, thrive, and become rich, yet work no harder, neither is their land of better quality. But the practice of years has made them perfect in whatever they undertake. These old stagers never expect too much. Another class will so diversify their farming as to lose by having too great a variety to look after. Specialties would pay them infinitely better ; but even this rudimentary fact they have to learn. If one class expects too much, another undertakes too much.

Every one who proposes coming out of the great city to reside upon a farm, particularly he who desires to thus support his family, should determine beforehand what he intends to do, — whether to go into general farming, into fruit-growing, or into “truck” or market-gardening. In choosing, he should consult his tastes as well as his means. If his object be grain-

farming, he should go where land is to be had at low rates. If his taste should lead him to prefer the fruit-culture, he should hug the avenues that lead directly to the great markets. In these crowded cities, though hundreds may be daily driven out to seek homes in the country, yet thousands remain there whom the severest monetary stricture never reaches. They know of hard times only by hearsay. Such always have money wherewith to gratify their appetites for whatever luxuries the market may present. They keep the opera in full play, no matter how many hungry thousands may be around them. At their grand parties, the floral decorations alone cost more than the value of a small farm. The winter strawberries on their tables cost ten dollars a quart. On these avenues he may buy land with safety. Population is crowding into the regions which they traverse. Unless it has been unduly inflated by speculation, such land must annually become more valuable.

The first charge on agricultural products is for transportation to market. Hence whatever one may have to sell, the nearer he may be to it, the less will be the charge. This is one reason why the great market-gardeners plant themselves so near the cities. Their products being bulky, and less valuable than fruit, cannot so well afford a high charge for freight. All these essential points must be considered by those who are about leaving the city, as well as by others who are changing from one style of farming to another. The producer of berries on a large scale must locate where the population is sufficient to furnish hands to pick the fruit in season. Strangers to New-Jersey horticulture often wonder how we find pickers enough to gather the great quantities of berries which are cultivated among us. But the pickers seem to have multiplied as the berry-culture has extended, until the two branches of a really great trade now work in perfect harmony. When the fruit ripens, an army of pickers seems to spring up out of the ground. Every town and village sends its swarms of women and children into the strawberry-field. The country schoolhouses are abandoned, that the children may share in the profits of the fruit-harvest. An ordinarily smart girl will pick a hundred quarts per day, and go home long before night-fall with two dollars in her pocket. Such pay for this class of help will empty every schoolhouse in the country. Then follow the raspberry and blackberry, thus giving long and profitable employment to

a body of trained pickers whose numbers and skill insure the prompt harvesting of the crops. The vast quantities of early field-pease grown in New Jersey, the pickles, the tomatoes, even the turnips, are gathered by the same industrious class of people. The whole picking-business is known and coveted as a profitable one. Where fruit-growing has long been established, there all the essentials for conducting it profitably will be found within reach ; and therefore it is to such locations that the prospective fruit-grower should direct his attention.

In every human enterprise, there is some hazard of failure. Business in the city is infinitely more uncertain than in the country. It is true, that a lucky hit in cotton or in stocks may make one wealthy in a day, compared to which all horticulture is a very slow coach. The next turn, however, may strip the millionaire of his last dollar ; but our slow coaches move steadily on, safely and comfortably, because we do not make haste to get rich. Failure is not peculiar to a country occupation. The earth contains within its bosom a sure living for all who industriously and intelligently labor to extract it. If they fail in doing so, they must not accuse the soil, but themselves. The failure springs from some fault exclusively their own. But it is well that bad luck, whether in town or country, seems to produce no discouragement to others. Where one drops out of the ranks, a fresh candidate is ready to take his place. The stock exchanges of the great cities have thrown out innumerable pecuniary wrecks ; but are they not more crowded with fresh adventurers than ever ? So country life may have its disappointments ; but none of them are absolute wrecks.

In choosing land, where immediate income is desirable, it will be cheaper to pay what may seem a high price for an acre well filled with bearing fruits, than much less for one in which the plants must be set and tended until they come to yield a crop. Such land will pay interest and a profit from the start. A beginner may be embarrassed by his want of experience ; but he can call in the skilled help of the neighborhood, from which he will be constantly learning for himself. His very inexperience will make him tractable, and desirous of doing so. The absence of a headlong self-conceit will be useful to him. He will have nothing to unlearn. He must not invest every thing in land, as a floating capital proportioned to the number of his acres will be indispensable to success. As plants grow

slowly, so must he exercise patience. Do not expect to realize, the first year, the profit which the second or third may be made to produce. The first is usually a year of preparation, in which many things must be done that will not require repeating. Be careful not to expect too much, and disappointment will not follow. Let not an excessively wet or dry season produce discouragement or disgust, as such happen to us all. They are sometimes great drawbacks, especially to beginners ; but they are never actually ruinous. Where one fruit thus perishes, two or three escape and pay well. As to glutting the market, that fear is subsiding. There are certain fruits of which no sufficient supply has yet been raised. Among these are raspberries and currants, all which pay great profits. A devotion to these two fruits alone, on a few acres, will produce annual returns fully equal to the value of the land on which they may be grown. Hence, if those who are now enjoined to disperse and scatter into the country will begin wisely, be industrious, persevering, and hopeful, they can assuredly draw from Mother Earth that certain maintenance which the entire agriculture of this country proves to be contained in it. *Edmund Morris.*

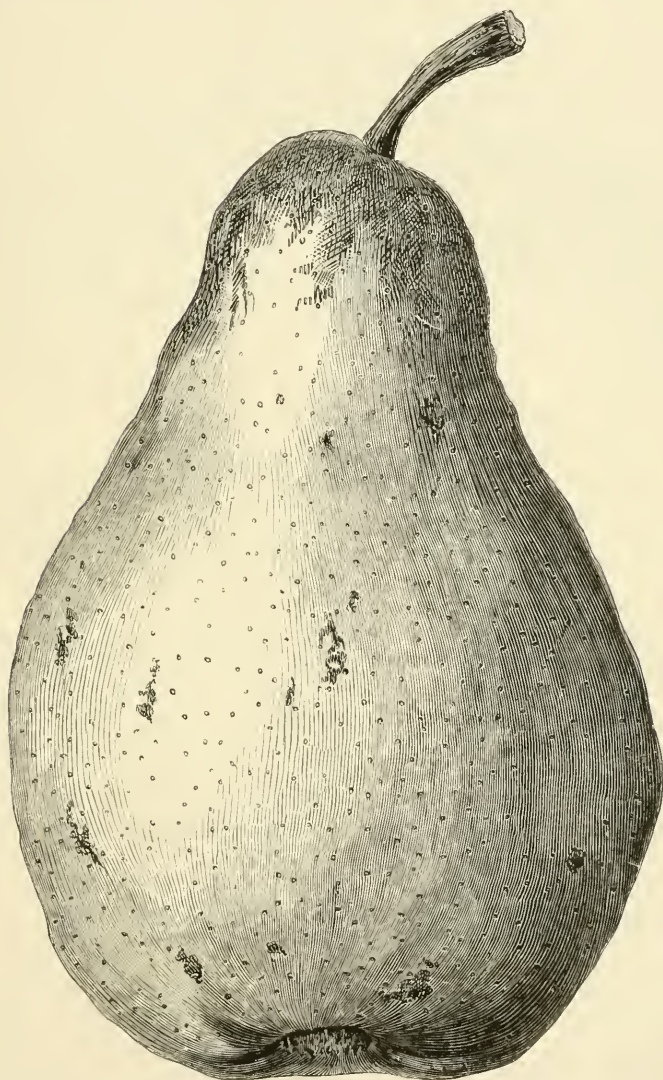
BURLINGTON, N.J.

STRAWBERRY-BEDS

SHOULD be carefully weeded out as soon as the state of the soil will admit. It often happens that this work is left until the plants are in bloom, or neglected altogether, much to the injury of the crop. It will pay to cultivate this crop well, and thereby secure the best results. All who have a plot of ground, though it be only a garden-patch, should set out a strawberry-bed, to furnish, if possible, an abundant supply of this delicious fruit, at least for home consumption.

THE ADMIRAL FARRAGUT PEAR.

WE have received the following description of this new pear from its



originator, Dr. Shurtleff. Its large size and fine appearance, added to the

vigor and productiveness of the tree, may render it a valuable variety for market-purposes, if not for the amateur.

“The fruit is long, pyriform in figure, measuring five inches in length, and from three to three and a half inches in diameter ; stem rather stout, about three-fourths of an inch long, curved, set in a shallow, one-sided depression ; calyx medium size, set in rather shallow basin ; segments slightly reflex ; the skin is green, with numerous dots, and a considerable blush on the sunny side ; the flesh is melting and juicy, fine grain, with a pleasant sub-acid flavor. It always ripens soundly, and can be picked a little before maturity if long transportation is necessary. It comes in about Sept. 25, just on the heels of the Bartlett ; and has always sold for a much higher price, on account of its large size and beauty. The tree is eighteen years from the seed. It bore a barrel and a half of fruit in 1866, and it has fruited very abundantly every year. The tree is strong ; making long, healthy shoots of moderate thickness. The pear has steadily improved year by year ; and, last year, was better than ever before.”

PEACH-TREES IN POTS.

THESE should not be set out too early, especially if they have been kept in a warm cellar during the winter. It sometimes happens, unless care is used, that the buds start so early, that they are destroyed by a late frost. Some who have been quite successful in growing peaches in this way have kept them during the winter in a barn-cellar, where they have been kept cold and in a dormant state until the season was well advanced.



WE lay before our readers this month another letter from our correspondent, Hon. Joseph S. Cabot, which will be of special interest to floriculturists. There is no branch of horticulture which is brought to greater perfection in England; and the progress there made should stimulate our countrymen to more ardent efforts, which cannot fail to meet their due reward.

To the Editor of "The American Journal of Horticulture and Florist's Companion."

IN England, as in the United States, cattle-shows and horticultural exhibitions are of frequent occurrence, which, in their character, arrangement, and management, seem to be very similar in both countries. In consequence of this similarity, then, if I attempt to describe those of England, as you are familiar with those of America, I cannot tell you any thing that is new; yet it has seemed to me to be possible that an account of some of these exhibitions in the former country at which I happened to be present might not be wholly without interest. As the value of such account to you would depend very much upon particulars, it is unfortunate for me, that, in making it, I am obliged wholly to rely upon my recollection; and, as the exhibitions to which it refers took place some months since, it is most likely that my memory will prove at fault with regard to what I should most wish to tell.

On the 25th of May occurred the first Flower Show in London for the year 1867: it was at Sydenham, in the Crystal Palace, about half an hour from the city by rail. The place selected — the Crystal Palace — is very well adapted for shows of this kind, that require a good deal of room; and, in its large halls and long galleries, ample space is obtained to display the plants, without crowding, to the best advantage. It is a place of general and constant resort; and the trains

of two different railroads, that run frequently to and from London through the day and evening, afford every desirable facility for visiting it. As the weather on the day of the show was fine, there was a large concourse of spectators, whether drawn thither by the Flower Show alone, or whether the other attractions of the palace exercised an influence, I cannot say. The price of a ticket of admission, if purchased *three* days before, was five shillings; two days before, seven shillings and sixpence; and if not bought until the day before, or at the door, ten shillings. The plants were arranged on two parallel tables four hundred or five hundred feet long; in one of the long galleries, with ample space between the tables for spectators to pass between, and examine the plants at their leisure. There were some cut flowers; but the greater part of the plants, I think all shown for the prizes, were in pots. Each kind of flower was placed by itself, so that the judges and the public could compare one with the other with more facility. The plants shown were mainly roses, geraniums, azaleas, and those of the lily-tribe. The roses had, in all cases, each one of their branches attached to a small stake inserted in the ground at a determined angle; and all buds partially opened, or faded flowers, being removed, there was on every bush only fully but freshly opened roses in their greatest perfection. This mode of arrangement was novel to me. Although it gave to the bushes a stiff and unnatural appearance, yet it exhibited the flowers to the greatest advantage. The number of pots of roses, though large, was not, perhaps, as great as one had a right to expect at a show in London; yet it seemed to me that the quality of the flowers exhibited left nothing in that respect to be desired. Large, very double, fully but not too much expanded, of almost all shades of color, they made a superb show. I have no pretension to be an accurate judge of the qualities of these flowers, or to be any more of a connoisseur in them than any one who is fond of seeing beautiful roses (and that is every one); but, to me, this exhibition of this flower was much the finest that I had ever seen; and I could not imagine that any one, although it might be larger, could be better. The number of geraniums exhibited was much greater than that of roses: the plants were all healthy and vigorous, covered with flowers of all shades of color, and every conceivable marking. They were very beautiful; but I cannot, after this lapse of time, undertake to specify the particular varieties that seemed to me especially worthy of notice. I believe that those varieties of geraniums that have variegated leaves are now held in the highest estimation: these have on each leaf, besides the foundation of green, three other distinct colors,—on the outer edge of the leaf, a circlet of yellow; next within, one of dark or purple; and, within that, one of red, occasionally of brilliant scarlet: these circles of color are distinct, though running somewhat into each other. The flowers of these variegated geraniums are, I believe, not distinguished for beauty. Of those that I have seen, the flowers were scarlet, and not very large; this was the character of a considerable quantity of them that I afterwards saw bedded out: but these might all have been of one variety, and others may differ. These varieties of geraniums were new to me; but probably you are familiar with them. I add a description of two of the newest of these varieties of tricolor pelargoniums, offered for sale to subscribers, of which there appeared to be no lack; the plants to be delivered, one

in August, 1867, the other in May, 1868, as copied from the proposal: "Miss Watson, of robust growth, compact habit, and easy cultivation; flower a lively salmon-color; fine large truss; leaves superbly colored with deep-red and chestnut zone and sulphur edge; retail price in August, 1867, two pounds and two shillings." "Mrs. Dix, yellow edge; olive-and-bronze zone, breaking into bold bars of clear brick-red (the red of wet bricks); the disk dull green; leaves round and flat; the plant compact and dense; to be sent out in May, 1868, at thirty-one shillings and sixpence." When it is remembered that the price of which the first of these above-named varieties was offered is, in American currency, about fifteen dollars, and that of the second about eleven dollars, it shows, I think, that these varieties are very much in vogue, and highly esteemed; or else that the proprietor must count upon the facility with which amateurs are gulled into the purchase of new things. The azaleas were fine plants, of a regular conical, perhaps I might say rather of a pine-apple shape; so covered with blossoms, that scarcely any thing else could be seen; so that a plant of the scarlet variety seemed to be, as it were, a blazing bush when looked at from a little distance. Of the flowers of the plants of the lily-tribe that were exhibited, I shall say but little. Many of them were very fine, and many were new to me. And so, too, of some plants that were said to be entirely new. Of both of these, my recollections are too vague to permit me to attempt to specify or describe any; if I did, very probably my attempts would be failures or erroneous: and all except the statement of their exhibition, I feel, had better be omitted. My impression of the show was, that it was a fine one, and that it must have been satisfactory to those who originated it; and it was with surprise that I subsequently read in "*The Times*" an article whose writer took a different view, but rather, as I think, expressing dissatisfaction with the extent of the show than with the articles exhibited.

On the 4th of June, there was a Flower Show by the Horticultural Society at their garden in South Kensington. This was in the open air, under a tent, in a part of the garden, where, from a circular, level place, the ground, sloping upwards on three sides, formed a kind of natural amphitheatre, that permitted an advantageous display of the plants. This exhibition was, in its general characteristics, very similar to that at the Crystal Palace. The roses, though not very numerous, were superb, and the geraniums and azaleas very fine. Besides these, there were numerous other plants of various kinds, collections of heaths, and many plants of variegated foliage. But what struck me most was a show of pansies. I am afraid that I shall be thought to use too extravagant terms; but I must say that these pansies were to me magnificent,—such as I had never before seen. They were very large; their petals thick, like a piece of velvet, that, when laid flat, formed a perfect circle. The prevailing colors were yellow, purple, and white, with purple eyes and marking. These flowers have always been particular favorites with me: but such as these I had never seen, or indeed imagined; and I was glad to see in what perfection they could be produced by skill, combined with, perhaps, other favorable conditions. Besides the flowers, there was at this exhibition about a hundred cots of strawberries, with trusses of fine berries; a few very fine peaches and nectarines, and grapes both black or purple-and-white. The Black Hamburgs were large bunches with large berries, but not

better than I have often seen ; and the other varieties were in no way remarkable.

There seems to be a prevailing opinion, that England, from its climate, is not suited to raising fine fruit. This opinion is, in the main, probably well founded, though perhaps not to the extent that it is sometimes entertained ; for some kinds of fruit, especially the smaller kinds, are produced there in great perfection and abundance. I have never eaten better, rarely as good, strawberries, as I have eaten in England ; and this not only in London, but in the smaller cities in different parts of the kingdom. In the south-western and southern parts of the island I found them abundant, very large, handsome, and of fine flavor, at a very reasonable price. At Bath, for a basket containing three quarts of the Alice Maud variety, I paid but two shillings : and this was not a solitary instance ; for very fine strawberries could be purchased at other places at equally reasonable rates.

The earliest strawberries that I noticed in the London market were of the variety called Alice Maud : of these, fine berries early in the season sold for one shilling and sixpence per basket of about two-thirds of a Boston box. Strawberries in England are brought to market with the hulls on in all cases. Later in the season, the price was a shilling per basket ; whilst in the height of the season, when the market was most abundantly supplied, the price in London was ninepence per basket. The largest strawberries that I saw were called British Queen ; and these sold, extra large, selected berries, from one shilling to two shillings per basket. The British Queens were extra large, handsome, and of fine flavor ; and I think that of this or some other variety I could, on any day during the season, have purchased, in Covent-garden Market, strawberries, that for size, beauty, and flavor, if exhibited at the Massachusetts Horticultural Society's Show, would have received the prize over all competitors. Cherries are also very good : of these I saw several varieties, also gooseberries and currants. In many parts of England, apples are largely cultivated, both for the dessert and for cider. In Herefordshire, Worcestershire, Devonshire, and some other counties, there are very extensive orchards of this fruit, and much attention is paid to it. Of the quality of apples for the dessert, I have not sufficient experience to express an opinion ; it is a fruit that I rarely eat : but of the cider I can speak in terms of unqualified commendation ; some of it was very good. I have drunk in Devonshire, made there, "Herderer's Champagne Cider," that was in every respect fully equal to the best made at "Weld Farm ;" and no higher terms of praise can be bestowed upon it.

In some parts of England, a good many pears are cultivated. I have seen quite large orchards of pear-trees, both on quince and on their own roots, in the neighborhood of London ; and they are grown quite extensively in other places, as in the Vale of Evesham in Worcestershire, and in Hertfordshire. But I must be permitted to doubt whether the finest kind of pears can be cultivated in the open ground with more than a very moderate degree of success. Indeed, I was told by a most intelligent cultivator in one of the central counties of the kingdom, that the pears on trees planted in the squares of a garden surrounded by a high brick wall, sometimes failed to ripen. A good many pears

are, I suppose, raised on trees trained on walls ; but I cannot but doubt whether any but some of the hardest varieties, of generally not the finer kinds of this fruit, can be successfully grown in the open ground in England. In Jersey, one of the Channel Islands, where the climate is mild, pears, and also the more delicate fruits, as grapes and peaches, are very successfully grown ; and many of the best pears in the London market are supplied from it.

Joseph S. Cabot.

DEC. 17, 1867.

WHY NOT ? — Why should not the principle of our copyright and patent laws be applied to the originators of valuable fruits as well as to authors and inventors ?

This is a question, it appears to me, which any thoughtful man will find it very difficult, if not impossible, to answer. If a man writes a book, whether of any real value to the community or not, the law recognizes it as his property. He is protected in his legal right to it, as in his right to house or land. He may, for a valuable consideration, transfer his ownership to some publisher, as he may transfer bank-stock ; or he may authorize the publication of his work on condition of receiving a certain percentage of the profits : and so, in proportion to the public demand for his book, the law secures him a remuneration for his toil. This, certainly, is just and right.

If one invents some machine which promises to promote the public good, the law steps in, and confers upon him a patent as a reward for his study and toil, and an encouragement to others to employ their minds in the same direction. His invention may be an important or a trivial one : it may be a sewing-machine or a fragile toy. But, whatever it be, the guardian law lifts up its authoritative voice, and says, "No man may manufacture or sell that article without the inventor's consent." And so, as in the case of the author, it secures to him such a compensation for his work as the public may decide it to be worth ; and that compensation sometimes amounts to a princely fortune. This, certainly, is as it should be.

But why should not the same principle be carried still farther ? If one devotes his time and study to the originating of a fine fruit, like the Iona Grape or Clapp's Favorite Pear, why should not the law secure to him, as it does to the author and inventor, a suitable compensation for his work ? Why should not the law give to Dr. Grant, or Mr. Dana, or Mr. Rogers, such protection as it gives to Dr. Holmes or Prof. Lowell ? Why should it say to the inventor of a new pop-gun or humming-top, "You have done a good thing for society, and shall therefore be rewarded by protection against all competition in your sales," but say to the originator of Dana's Hovey or the Diana Hamburg nothing at all ?

Is this just and right ? Can any good reason be given why the law should so discriminate in favor of authors and inventors, to the entire neglect of the originators of valuable fruits ? Can any one tell why the deviser of the little toy called "the Quaker-gun" should be so shielded from competition in his sales as to realize (as I have seen it stated) a fortune of fifty thousand dollars, while

the originator of the Rogers's Hybrids or the Concord Grape is left to receive simply such compensation as he can secure from the sale of his plants before other propagators get hold of them? Why should not the law say to Mr. Rogers or Mr. Dana, or any man who will bless society with a new and valuable fruit, "You shall be treated as authors and inventors are; you shall have for a reasonable time a monopoly of the market for the sale of your fruit, trees, or plants, as a well-merited compensation to you for your time and trouble, and an inducement for others to imitate your example"? What reason can be given for our copyright or patent laws which does not apply with equal force to a similar law for the protection of fruit-authors? Has not the Concord Grape done as much for the public good as the Quaker-gun? Are not the tact and perseverance which were evinced by Mr. Rogers in securing for us his hybrid grapes as worthy of public reward as the same traits when devoted to the preparation of a new spelling-book? Do not the happiness and welfare of society demand that the production of new and superior fruits should be encouraged as much as the production of new novels or new toys? Is there not an occasion and demand for wise legislation upon this subject?

W. H. W.

READING, MASS.

CALLA LILIES. — There is no better plant for parlor-culture than the well-known calla (*Richardia Æthiopica*). To grow it in perfection, it should have a season of partial rest in summer, and plenty of water in the growing season. Our plan is as follows. In June, procure a dozen medium sized plants; set them in rich, moist soil in the garden, or in nine-inch pots in rich loam; placing the pots in moss in a tub. Keep them moderately wet all summer, and give them the benefit of full sunshine. By the middle of September, the plants will have made a stout, healthy, stocky growth, but will have given but little flower: they will not, however, have been unornamental; for the rich foliage makes a fine bed in the garden; or if grown in pots, in a tub, the mass of sagittate leaves is very effective. Having provided a hollow table (like the bulb-case described in the October number of "The Journal of Horticulture"), the plants should be transferred to it just before the first frost. Those in the garden should be carefully lifted with a ball of earth, and potted.

The pots should be arranged in the case so as just to touch, and all interstices be filled with moss, and a covering of bright-green wood-moss be laid over the whole, so that the plants seem to spring from a carpet of moss. Place the case in a sunny window, and the plants will soon begin to grow, and, by the middle of October, will show bloom. They will continue to flower until May; the only care required being to protect them from frost, to water plentifully, to wash the leaves with a soft sponge if dust collects upon them, and to remove dead leaves and flowers.

Our small plant-case, containing six callas during the winter of 1866-7, had at no time less than five flowers and buds, and often as many as eight.

In spring, plant out the callas, or remove them to the tub out of doors, which is the least troublesome, and, we think, the better way.

E. S. R., Jun.

GLEN RIDGE, October, 1867.

TREE-SEEDS. — When these can be gathered in the autumn, they should be mixed with sand, and kept through the winter in some place secure from mice. Some of the coniferous trees do not ripen their seeds until spring. The cones will generally open of themselves, but may be very much assisted by placing them before a fire for a few hours. When the spring is fairly open, the smaller and more delicate seeds should be sown in a bed prepared specially for them, composed of sand, loam, and leaf-mould, in about equal parts. This bed should be so situated, that the plants will not be exposed to the burning heat of noon-day, and dry, scorching winds, during the early summer. The seeds should be sown in drills, and covered with leaf-mould or light loam. These beds will require watering quite often, both before and after the plants come up. Some use meadow-moss, which retains the moisture well as a mulch. A great many are raised in frames placed in a cool, sheltered position; so that, while a few years ago we were entirely dependent upon the nursery-men of Europe for young evergreen and other trees, now we raise them in large quantities.

DELAWARE GRAPES. — I have noticed frequent complaints in your Journal concerning mildew on the Delaware vine. I have a vine four years old, that gave thirty-five bunches this year of thoroughly-ripened fruit, at the same time making many new canes, twenty of which were over fifteen feet long; while but very few leaves mildewed, and those only after the fruit had ripened. I attribute my success to thorough drainage, frequent stirring of the soil with a garden-fork, and training so as to fully expose the vine to the full blaze of the sun; though we had but very little sunshine the past season. I have no fault to find with this variety. G. S. G.

COVERING STRAWBERRIES. — I have, for the last five years, used corn-stalks for covering my strawberry-beds. Straw and hay often contain seeds, causing much inconvenience the next summer. These, as also leaves, frequently make a covering too compact, especially where the snow is deep. We have no evergreen boughs. I consider corn-stalks as decidedly the best as well as the most convenient material for such a purpose. The stalks may be removed in the spring, leaving the brittle, broken leaves as a mulch for the summer.

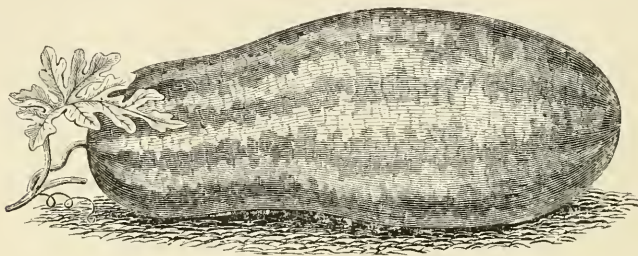
The covering should be light, permitting the snows of winter to be sifted through the stalks upon the vines. *

GALENA, ILL

BEURRÉ D'AREMBERG PEAR. — This is a very fine winter-pear, of medium size and excellent quality, but rather difficult to raise. The tree is a very poor grower; and the variety should, in all cases, be grafted on the top of a large tree. We have tried for years to push forward a young tree we have in our orchard, but in vain; and we fear we never shall gather much fruit from it: while we have a few scions, which were put into the top of a large tree a few years ago, that yearly yield large crops of fine fruit. Let those who admire this excellent pear just try the plan we have adopted, and they will not be ready to give it up as utterly incorrigible.

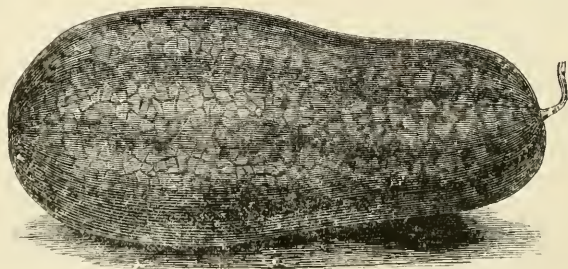
MELONS. — We continue our extracts from Burr's "Field and Garden" this month, giving a valuable chapter on melons: —

Carolina. — Fruit of large size, and of an oblong form, usually somewhat swollen towards the blossom-end; skin deep green, variegated with pale green or white; flesh deep red, not fine grained, but crisp, sweet, and of fair quality; fruit frequently hollow at the centre; seeds black. This variety is extensively grown



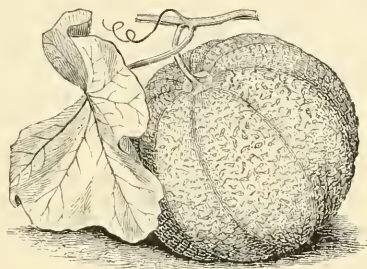
in the Southern States for exportation to the North, where it appears in the markets about the beginning of August, and, to some extent, in July. Many of the specimens are much less marked with stripes and variegations than the true Carolina; and some shipments consist almost entirely of fruit of a uniform deep-green color, but of the form and quality of the Carolina. Downing mentions a sub-variety with pale-yellow flesh and white seeds.

Mountain Sweet. — A large, long, oval variety, often contracted towards the stem in the form of a neck; skin striped and marbled with different shades of green; rind rather thin, measuring scarcely half an inch in thickness; flesh scarlet, and solid quite to the centre; seeds pale russet-brown, but often of great depth of color in perfectly-matured specimens of the fruit. A popular and exten-



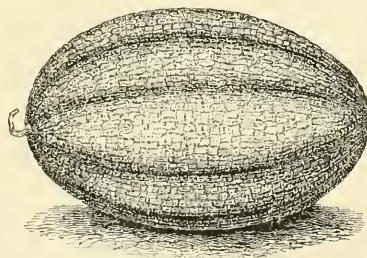
sively-cultivated variety, quite hardy, productive, and of good quality. For many years it was universally conceded to be the best market sort cultivated in the Middle States, but of late has lost some of the properties that recommended it so highly to favor. Its deterioration has probably been owing to the influence of pollen from inferior kinds grown in its vicinity.

Green Citron Melon. — Fruit nearly round, but flattened slightly at the ends, deeply and very regularly ribbed ; size medium or rather small, average specimens measuring about six inches in diameter, and five inches and a half in depth ; skin green and thickly netted, — when fully mature, the green becomes more soft



and mellow, or of a yellowish shade ; flesh green, quite thick, very juicy, and of the richest and most sugary flavor. It is an abundant bearer, quite hardy, and remarkably uniform in its quality. It is deservedly the most popular as a market sort ; and for cultivation for family use, every thing considered, has few superiors.

Large Ribbed Netted. — Common muskmelon. Fruit very oval, large, strongly ribbed ; skin yellow, very thickly netted, sometimes so closely as to cover nearly the entire surface ; flesh salmon-yellow, remarkably thick, sweet, but not



fine grained or melting when compared with the recent and improved varieties. Hardy and productive. In good soil and favorable seasons, the fruit sometimes attains a length of fifteen inches, and weighs upwards of twenty pounds.

White Japan. — A recently-introduced, roundish, medium-sized, or rather



small variety ; skin cream-white, and very thin ; flesh thick, remarkably sweet,

and fine flavored, — if the fruit is well matured, almost rivalling that of the green citron. It ripens early, and is quite productive.

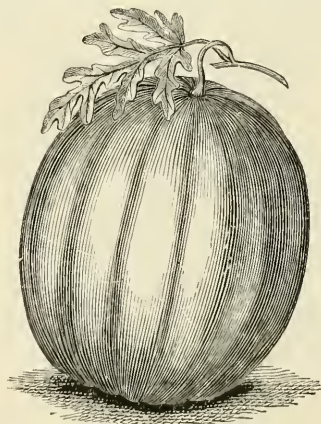
Of the numerous new sorts that have been offered to the public within the past two or three years, this appears to be one of the most desirable.

Nutmeg. — Fruit oval, regularly ribbed, eight or nine inches in length, and about six inches in its broadest diameter ; skin pale green, and thickly netted ; rind thin ; flesh light green, rich, sweet, melting, and highly perfumed. The



nutmeg melon has been long in cultivation, and is almost everywhere to be found in the vegetable garden, though seldom in a perfectly unmixed state. When the variety is pure, and the fruit perfectly ripened, it is of most delicious excellence, and deservedly ranked as one of the best.

Black Spanish Watermelon. — Fruit of large size, roundish or oblong, generally more or less distinctly ribbed ; skin very dark or blackish green ; rind half an inch thick ; flesh deep red (contrasting finely with the deep-green color



of the skin), fine grained, sugary, and of excellent flavor. The variety is hardy, productive, thrives well, matures its fruit in the Northern and Eastern States, and is decidedly one of the best for general cultivation. Seed dark brown or nearly black.

Christiana. — This variety was originated by the late Capt. Josiah Lovett of Beverly, Mass. Form roundish; size rather small, average specimens measuring nearly the same as the green citron; skin yellowish-green; flesh yellow, sweet, juicy, and of good quality. Its early maturity is its principal recommendation; the green citron, nutmeg, and many other varieties, surpassing it in firmness of flesh, sweetness, and general excellence.

It would probably ripen at the North, or in short seasons, when other sorts generally failed.

WORMS IN STRAWBERRIES. — During a very dry spell of weather in October, I planted five hundred Wilson's Seedling, and three hundred Triomphe de Gand; the first-named on the western portion of my garden, and the latter on the eastern. They were planted in hills (the ground having been prepared in August), spaded thirty inches deep, and manured with leaf-mould and hen-manure; both squares receiving the same treatment. In the first-named square, tomatoes and corn had been raised; on the eastern square, okra had been cultivated. As it was dry weather when the plants were received and transplanted, the leaves and roots were clipped very close; but, with daily waterings, the plants grew, a very few dying, and, up to first of January, were thriving — the Wilson's blossoming, and several plants having berries. I noted a number of the blossoms on the Wilson's falling aside, and the new leaves also dying; and I examined several plants, and found worms were eating them, buds and plants. The worms were of several kinds, the largest of a dun-color, and another, a size smaller, of a black hue (probably the male and female), and numerous small ones of various colors, — black, brown, and red.

The square of Wilson was badly affected by these worms, that resembled a cabbage-worm nearer than any worm I know of. I wish to know how to rid my plants of these pests. And can any one account for the reason they are on the Wilson plants, and not at all on a square of Russell's Prolific adjoining, although the Russell are full of young berries and blossoms, and the foliage much more luxuriant? Nor are they on any other variety of berries on my place. The Triomphe de Gand plants came from same place, were treated in every respect the same; the only difference being, one was on the eastern, and the other on the western side of the garden.

John Hickson.

MOBILE, ALA., January, 1868.

TEST FOR ALKALIES. — A new and highly sensitive re-agent for alkalies and alkaline earths has recently been discovered by Prof. Böttger, in the leaves of *Coleus Verschaffeltii*. The re-agent is prepared by digesting the fully-developed leaves of this plant in alcohol, and impregnating slips of Swedish filter-paper with the solution obtained. This test-paper is of a beautiful red color, which becomes green under the influence of an alkali or alkaline earth. It is not affected by free carbonic acid; so that it may be used for detecting carbonate of lime in water.

BIRDS AMONG FRUITS. — For many years, there has been much complaint among fruit-growers at the East because of the damage done to the fruit-crop by robins and other birds. The strawberries suffer severely, and many dollars are lost to the gardener because of the birds. The cherries suffer badly, as well as the early pears, raspberries, and other fruits. When the grapes are ripe, whole flocks of robins can be found about the vineyards, where they destroy an immense quantity of this valuable fruit. We find that the fruit-growers of the West are not exempt from this evil ; for many complaints come to us from that section of country. Some owners estimate their loss at fifteen or twenty dollars a day during the season of ripening fruits. The depredations have not been committed by the robin alone ; but orioles, jays, thrushes, and catbirds have each taken their part in the general destruction. It cannot be denied that some of these birds are a benefit to the fruit-grower, and should not be destroyed ; but we have not much to say in favor of preserving the common robin. In some States, this bird is protected by the law ; the wise ones who yearly assemble to regulate the laws having decided that they should be protected. We have reluctantly come to a different conclusion, and do not hesitate to advise the destruction of the robin. This is the only effectual way of getting rid of them ; though they may be kept off if boys are employed and located about among the strawberry-beds and in the vineyards with watchmen's rattles, or two pieces of wood to strike together to make a noise and frighten them off. It has become a serious question with fruit-growers as to what shall be done with the birds.

APPLES FROM NOVA SCOTIA. — We lately saw a box at the rooms of the Massachusetts Horticultural Society, containing specimens of fifty-four varieties of apples ; most of them being fair and handsome, and equal in size and quality to those grown in any part of the United States. Some of them were old and well-known varieties, including the Baldwin, Rhode-Island Greening, Gravenstein, Hubbardston Nonesuch, Golden Russet, Minister, Dutch Codlin, Porter, Tolman Sweet, Roxbury Russet, and others ; while there were a few that were new to us, being seedlings, and having only a local name and reputation. We understand that they have a very flourishing Fruit-growers' Association at Cornwallis, N.S., where these apples were produced. We are glad to know that our neighbors have made so much progress in horticulture.

KEEPING VEGETABLES. — Sink a barrel two-thirds of its depth into the ground (a box or cask will answer a better purpose) ; heap the earth around the part projecting out of the ground, with a slope on all sides ; place the vegetables that you desire to keep in the vessel ; cover the top with a water-tight cover ; and, when winter sets in, throw an armful of straw, hay, or something of that sort, on the barrel. If the bottom is out of the cask or barrel, it will be better. Cabbages, celery, and other vegetables, will keep in this way as fresh as when taken from the ground. The celery should stand nearly perpendicular, celery and earth alternating. Freedom from frost, ease of access, and especially freshness, and freedom from rot, are the advantages claimed. *G. S. G.*

CULTURE OF THE TREE-PÆONY AND ITS VARIETIES.—Tree-pæonies are among the most beautiful of hardy shrubs, and are great ornaments to the flower-garden when in bloom during the month of May. They are not, however, grown so generally as their very great merits entitle them to be. The reason is, that many persons think they are not sufficiently hardy to endure our severe winters. A strong, rich soil, with plenty of moisture during the growing season, has generally been recommended as best adapted for them. They will grow very well in such a soil; but if the subsoil be of a retentive nature, and the situation low and confined, the young wood and buds will not get properly matured in unfavorable summers, and they will, in consequence, suffer more or less should severe winters follow.

The tree-pæony and its varieties will succeed well in the open border without any protection whatever, and without any particular preparation of the soil, if only the subsoil be dry. The best time for planting them is towards the end of October or beginning of November, or, indeed, in early spring, before the buds break; but, with care, they may be removed at any time, except, perhaps, while in flower. With a little management, they force well, and are very useful for decorating the conservatory in spring.

They are increased by cuttings taken off in August, or in the early part of September, with part of the wood of the preceding year attached, and planted in a sheltered situation where they will root freely. They may also be increased from single eyes, like vines; also by layering, and by dividing the old plants.

If the tree-pæony were a new plant, how much would be thought of it! and how eagerly would it be sought after! But, because it is an old plant, it is neglected.

FISH-GUANO.—Among the many special manures that are offered for sale at certain seasons of the year is the article of fish-guano, or, more properly, ground-fish. The oil has been expressed from the fish, leaving the residue quite dry, and easy to manage. It should either be composted with loam or muck, and allowed to remain for a time; or it should be mixed with water, and used as a liquid manure. When applied in its raw state, it burns every thing that it touches: even grass will not stand the heat. It usually costs about eighteen or twenty dollars a ton, in barrels, delivered in the cities. At such a price, we think it a good thing to purchase for grass-land and for some other purposes.

IRON FOR PEAR-TREES.—Some years ago, there was quite a rage for putting old iron, in some form or other, about pear-trees. Some used iron filings quite plentifully, much to their disappointment. Of late, however, we have heard but little about this iron business; and we conclude that the advocates of this theory have found, that, in practice, it was of no value. It is very much like the notion of driving nails into the trunks of peach-trees to prevent the disease known as the yellows. Can anybody give any facts in favor of the use of iron for pear or other trees?

THE WHORTLEBERRY TOMATO.—A few seeds received last spring from New York, under the name of the "Whortleberry Tomato," proved on trial to be no other than those of the Black Nightshade, *Solanum nigrum*.

The plant is far from being new, though appearing under a new name. It abounds as a weed in many localities, particularly in the vicinity of old gardens; usually appearing in neglected spots, where, among waste and rubbish, it probably finds protection in the early stages of its growth from the ravages of the ground-flea, to whose palate its thin and delicate leaves appear to be peculiarly inviting. So persistent are the attacks of these insects, that in the open ground its cultivation is always attended with much difficulty; the young plants being frequently completely defoliated, and sometimes entirely destroyed.

The stem is about three feet in height, open and branching. The leaves are of medium size, thin in texture, and rarely perfect; a large proportion being more or less perforated or eaten on the borders by insects. The fruit begins to ripen soon after midsummer, and continues to form and ripen till the plants are destroyed by frost. It is produced in moderate abundance, in small drooping groups or clusters of four, five, or six together; and is of the size and color of the whortleberry; whence, probably, the name. The pulp is quite juicy, and somewhat sweetish to the taste; but it possesses withal a certain mawkish insipidity, that renders it any thing but agreeable.

Few plants have come under my notice respecting the history and properties of which authors are so much at variance. Many of the best European botanists describe it as a native of America; while Bigelow and Gray assert that it was introduced into this country from Europe.

Many scientific writers also regard it as possessing deleterious properties. King, in his "American Dispensatory," says that from two to three grains of the leaves infused in water will produce a copious perspiration; and adds, that "the berries are poisonous, causing torpor, burning in the stomach, fever, nausea, stupor, and insensibility."

On the other hand, seedsmen include Black Nightshade, *alias* the "Whortleberry Tomato," in their catalogues of seeds, classed as a spinaceous plant; and it has long been grown, and to a limited extent used, as a table esculent, like spinach. M. Dunal states, as "the result of numerous experiments, that the berries are not poisonous to man or the inferior animals;" and also adds, "that the leaves are consumed in large quantities in the Isles of France and Bourbon as food, having been previously boiled in water."

I am inclined to think, that while a solution of the leaves, or their use in a green state, might be followed by unpleasant results, when cooked and used as spinach the plant would prove not only harmless, but even palatable. So far as regards the fruit, I have tasted and eaten without experiencing in the slightest degree any one of the long catalogue of ills predicted for those who might be tempted to such an indulgence.

In my opinion, the plant has really little merit, however inoffensive. Its cultivation is too difficult, and it is too unproductive, to become a substitute for spinach; and there is little in the size, quantity, or quality of the fruit to commend it to public favor.

Fearing Burr.

HOW CHERRY-TREES SHOULD BE GROWN. — Years ago, it was just as easy to raise a good crop of cherries as to raise a good crop of apples. We remember, when a boy, we made good wages picking this fruit at fifty cents the bushel, the trees gave such an abundant crop. Several years ago, a change seemed to come over the cherry-trees. When grown too rapidly, they burst their bark in many places, permitting the gum to exude in abundance; and, finally, the limb or branch would die. Warts, also, became numerous, and did considerable damage; the curculio began to destroy the cherry as he had already the plum; and, lastly, a severe drought, followed by a severe winter, seemed to give the finishing touch to many of the cherry-trees. The remedy for the first trouble, we believe, is within our reach. We remember, some years ago, a neighbor bought a hundred cherry-trees, and set them out in an orchard, and began to manure, and treated them in this respect as he had done his apple-orchard, which was in a very thriving condition. In a year or two, many of the trees burst their bark, turned black, and parts died; and this continued until three-fourths of the whole were either dead or nearly so, being quite worthless. It was evident to the farmer that he had killed his trees by kindness: and he stopped manuring, and sowed his land down to grass; and this saved them. What would do for the apple-tree would not answer for the cherry. We know another orchard, now some years old, that we set out for a neighbor, where the trees have been kept in grass ever since the second year after they were set; and these trees have made a good, sound, healthy growth each year, and latterly, even for ten years past, except a single year, have borne good crops of fruit. There is not a more healthy cherry-orchard in the country. These trees have never suffered by the bursting of the bark, nor from warts. The best trees may be so forced in growth as to become tender and diseased, and in a short time worthless, as Neighbor Jones's trees did. We are perfectly sure that all who have been troubled by diseased cherry-trees, will, if they adopt the plan we have referred to, soon see the beneficial effects of it, and, though they may have to wait longer for fruit, will succeed in saving their trees.

NOTES ON SOME OF THE EARLY APPLES. — The Early Harvest is one of the best of the early apples, ripening the last of July or the first of August, but, unfortunately, requiring very high culture, and, when not receiving it, growing knobby, and of poor shape. It is of excellent quality, either for cooking or the dessert; and no garden can afford to be without it. Tree a moderate grower.

Red Astrachan. — This is a beautiful red apple, having a bloom like a plum. The fruit generally grows fair and of good size. It is most excellent for cooking, but rather acid for the table, though esteemed by many for this purpose. Flesh very white. Tree an upright and good grower. Said to be a native of Sweden. Well worthy of cultivation.

Early Sweet Bough is one of the earliest and best; though a sweet apple is not considered so valuable for general purposes as an acid fruit. It is a rich, sweet, and excellent dessert-fruit, yellow when ripe. Ripens in July and August. Tree a moderate grower and good bearer. Fruit generally smooth, and rather large. A desirable variety.

THE HATTIE GRAPE. — From time to time, new seedlings are brought out, some of which have a run for a short time, and are no more heard of. Others are found suited to certain localities, and are there planted: but occasionally a new and quite promising sort appears for a season, and then for a time is lost to sight, — some, from the grower becoming discouraged because his pet did not receive first praise; others because of the removal of tree or vine, throwing it out of fruiting for years, or possibly out of existence by death. Some years since, N. R. Haskell, Esq., of Monroe, Mich., sent me several varieties of grapes for an expression of my opinion as to their value; and among them was one under the name of “Hattie,” which appeared so promising, that I then made a drawing and the following description, hoping the next season to again see the fruit; but, up to this time, I have never met with it. The bunch was loose; but, as it was the first season’s fruiting, I concluded that would be remedied by age. The beauty of the fruit was such, that I do not like to lose sight of it; and, as I believe cuttings of the vine were distributed by Mr. Haskell, I now introduce it, hoping some grower may have fruited it, and be prepared to speak of it.

Description. — Grown from seed of the Michigan or Catawba; fruited first time in 1861; foliage similar to Catawba, but not as large, of a peculiar yellowish-green; wood light pale-brown; bunch medium, four to four and a half inches in length, not shouldered, rather loose; berries round, slightly oval, medium-sized, uniform; skin about same thickness as Catawba; color bright, clear red, translucent in the sun, with a fine white bloom, very beautiful; peduncles and foot-stalks long; flesh light pale-red, apparently, when cut in halves; but, when pressed out from the skin, it is a clear white, with little pulp, pleasantly vinous. Ripens with Concord.

F. R. Elliott.

VARIETIES OF LETTUCE. — “The London Gardener’s Magazine” describes forty-eight varieties of cabbage-lettuce, and sixteen varieties of the cos-lettuce. A selection of the best varieties is as follows, — Early White Spring, White Tennis-ball, Crisp Small Early, Stone-Tennis, Berlin White, Neapolitan, Stone-head Frame, Drumhead, and Crisp German, of the cabbage sorts; and Florence, Paris, and Bath, of the cos varieties.

TREE-PÆONY. — In making selections for shrubs this coming season, no one should leave out the tree-pæony. It is perfectly hardy; and, now that there are so many shades in flower, there is no reason for its omission in forming a mass of it alone. A good, strong soil is desirable for it; but in no case must it be placed where water stands at the roots during a wet fall or winter, because it results in a loss of all the flower-buds and of some length of wood. A moderately dry soil, but rich, suits it best.

F. R. E.

ASSOCIATION. — There is much in association: but we confess we should have been some time ere we should have taken the Belgian one to mind; viz., that a bouquet composed of hot-house flowers only is illustrative of a warm reception.

KINGSESSING PEAR.—This variety originated near Philadelphia, and is an excellent sort. It is a fruit of good size, rich, and high flavored; color green. The tree is a vigorous and upright grower. Fruit drops easily. We have found the tree to be quite thrifty and healthy, never having seen the least indication of fire-blight. It will never be a highly-popular market-pear, on account of its lack of color.

THE TOMATO AND ITS VARIETIES.—The great interest which appears to be taken in America in the cultivation of tomatoes, and the numerous varieties mentioned in their garden-publications, suggested to the authorities at Cheswick that it would be desirable to institute a trial of them here. Accordingly, in the spring of the present year, a large collection of varieties was procured from Messrs. Thorburn & Co. of New York; Messrs. Barr & Sugden (who obtained a collection from Germany); and Messrs. Veitch, Vilmorin, Carter, and Williams. All the varieties were grown and fruited in pots under glass, which has afforded an excellent opportunity of seeing them all in their true character. They were likewise grown in the open air against a south wall, where some of the later varieties, such as the Tomato de Laye, Fiji Island, and Tilden, have not done well this cold season. Grown in pots, the tomato makes a very handsome decorative plant; the cherry, plum, and other small-fruited sorts, especially so. Few plants are more strikingly ornamental in the autumn months than these, when well grown, and laden with their numerous clusters of brilliantly-colored fruits.

The *Round Red Tomato* of Barr & Sugden (Extra Early Red, Thorburn; Sims's Mammoth, Barr & Sugden) is a few days later than the yellow plum tomato. The fruits are red, roundish, ovate, and smooth, about the size of a Washington plum. It is very prolific.

The *Large Red Italian* of Barr & Sugden (Orangefield of Williams) is the earliest of the large-fruited sorts. It is very dwarf and prolific, bearing fine fruit within six inches of the ground. The fruits are very large, broad, red, and deeply corrugated, or ribbed. It is an excellent variety, and one of the best in the collection.

Keyes's Early Prolific of Carter is a tall-growing variety, with the divisions of the leaves larger and fewer in number, and also of a lighter color, than in any of the other sorts. The fruit is medium-sized, roundish, pale-red, slightly corrugated, somewhat later than the Orangefield, and very productive. It is altogether a first-class variety.

The *Great Mammoth* of Barr & Sugden (Large Red Thorburn) has smaller and more finely-cut leaves, with the fruits very similar to those of Grosse rouge hâtive.

The *Large Red* of Veitch is synonymous with Powell's Prolific. The fruits are medium-sized, roundish, and slightly corrugated; and the plants are very prolific.

The *New Giant* of Barr & Sugden is a very large and coarse late variety. The fruits are red, very deeply corrugated, and irregular. The plant is robust, and not very prolific.

The *Tilden* of Thorburn (Red Valencia Cluster) is a very strong-growing

variety, much praised in America. The fruits are large, full, roundish, slightly corrugated near to the stalk, only of a deep-red color. The leaves are deep green. It is rather late, and not so prolific as others, but very excellent.

The *Fiji Island* (Lester's Perfected, Thorburn) is very similar in all its characters to the Tilden, excepting that its fruits are of a decided crimson, — quite a distinct color among tomatoes. The fruits are large and very fine, both of this and of the preceding variety.

The *Large Yellow* of Veitch is the same as the common large red, excepting that the fruits are yellow. They are large, and deeply corrugated; and the plant is very prolific. — *A. F. B., in Florist and Pomologist.*

GRAPES IN TREES. — For some months past, an article relating to raising grapes on elms has been going the rounds of the press. The method is entirely at variance with the approved plans recommended by the modern writers of grape-books. In confirmation of the theory advanced in favor of raising grapes in this way, we give some account of our own experience. Some years ago, we had an Isabella grape-vine that ran up into a tall plum-tree, which stood in an angle of our house, with a north-east exposure, and in such a position, that it did not have more than three or four hours of morning sun. Yet the fruit on this vine — a variety that did not ripen well in other locations — never failed to ripen most perfectly, though few bunches of the fruit ever saw the sun; for the foliage of the tree was quite dense. Some years later, we planted a grape-vine beside a wild-cherry-tree, and allowed it to run rampant through and over the tree. It has never failed, since it first produced fruit, to give perfectly ripe clusters; though it has received no care beyond a limited supply of old, well-rotted manure. From this vine we have yearly sold the grapes for a good sum, and there is every prospect that it will be good for many years to come: whereas, within a few feet, the new and approved sorts, cultivated on the new and approved principles, were nearly or quite a failure the past year; and, in years before, they never have done so well as the vine in the tree. In Italy, it is said they train their vines in trees, and find it to be an economical arrangement. There is another great advantage to be derived from this training in trees, or rather allowing the vine to run into trees, — they are not exposed, nor do they suffer one-tenth part so much from blight, and mildew of leaf, or rot of fruit, as the vines standing in the vineyard trained to posts or trellises. It is more natural for the vine; for, go where we will in the forests, we find grape-vines pushing their way even to the very tops of the tallest trees, and spreading themselves out among the branches where they can mature their purple clusters. Again: we find them clambering over fences and bushes by the roadside, delighting the traveller by their fragrance while in blossom, and pleasing the eye and the taste of those who relish them when ripe. This plan will be objected to, because it injures, and in time destroys, the tree. We are not prepared to advise the planting of trees for this purpose, or, if any, not fruit-trees; but will simply advise those having trees that they do not value very highly, and are willing to devote to raising grapes, to plant a vine or vines beside them, and manure well, and they will be pleased with the results.

SEED FOR LAWNS: QUANTITY AND KINDS. — In a former number, we gave an article, from one of our correspondents well versed in grasses, upon the subject of a lawn and its seeding. Another of our correspondents, whose knowledge is not to be disregarded, objected to some features advised in the first article; and, from time to time during the season, we have had letters of inquiry in relation thereto. While we generally concede to our correspondents all knowledge, we confess that neither of these writers advised just as we should do, and have done during a quarter-century of practice, in the making of many dozens of beautiful lawn-grounds. To meet the questions of our inquiring friends, we will give *our* practice; which is, first to trench our ground for the lawn proper, not less than eighteen inches deep, either with spade or plough, according to its extent. In this trenching, if we can, we bury a heavy dressing of manure at the bottom; we make sure of at least ten inches, and the more the better, of true soil (not manure or weed trash) at the top. We rake all smooth, and leave it to settle for a week or two, or, at any rate, until we have one good, hard rain; then we go over it, and dress up with additional soil such places as have settled out of line or level; next we use two bushels of blue-grass, two bushels of red-top, one bushel of creeping bent grass, and twenty pounds of white clover, to each acre. We mix our seed, and then divide it into three equal portions, sowing first one portion, raking it in; then another portion, going cross-wise in our sowing and raking; then sow our third and last portion, and roll down with as heavy a roller as two men can drag. In this way, we have made good lawns by seeding in September, October, March, April, and May, — lawns that required frequent mowing early in July. In our practice, we have found all grains sown with grass-seed to be injurious rather than beneficial. We once used the sweet-scented vernal grass; but the aroma from it does not compensate for its coarse, strong habit, which often destroys the small and more valuable plants. Again: we use the quantity of seed given, because we find that it is cheaper to supply plenty of grass-seed, and fill up the ground therewith, than to spend a summer's labor of one, two, or more hands in pulling weeds; for, if the ground is not full of one thing, it will be of another, — at least, until the season's growth has tillered out the grass-roots to cover it. F. R. E.

THE LARGE-FLOWERED BLUE CLEMATIS. — *Clematis azurea grandiflora* is one of the most splendid of hardy climbers. It grows eight or nine feet high. We have two of them against a sunny wall, where they have stood for ten years, bearing annually hundreds of their large, blue, star-shaped blossoms. These are four or five inches in diameter, and consist of five or six petals radiating from the centre. The plants have usually had no other protection than a little straw and litter thrown about the roots, which have never been injured in the hardest winter. The tops have generally escaped unhurt; though at times the ends of the shoots are killed back for a foot or two, which does not prevent a profuse summer bloom. *Clematis Sophia* is another variety of still more vigorous growth, and somewhat larger flowers, a shade lighter in color. Both grow well in any light soil, enriched with thoroughly-rotted animal or vegetable manure.

F. P.

To the Editors of "The Journal of Horticulture."

HEATING WARDIAN CASES. — I have used for several years a Wardian case constructed on the plan given in Rand's "Flowers for the Parlor and Garden," p. 265, except that the ends are of wood. The dimensions are two feet by four: the top is raised by hinges. I keep my plants, without any heat in the case, in a room at a low temperature. Last spring, a gentleman of our city invented a heating apparatus, much more simple, and less expensive, than the one described on pp. 266 and 267 of the book before referred to. The heat is produced by a small kerosene lamp, at a cost of twenty-eight cents a week. With it I propagated all the plants, by cuttings and seeds, that I wanted for my garden. After this work was done, I removed the heating apparatus, and put it aside for the next spring; and my Wardian case was again ready to receive my plants this fall, to be again in the spring, in a few moments, converted into a Waltonian case for propagating. It is surprising, the amount of work accomplished by means of so small a case.

Mrs. J. A. Newhall.

[The Editors would be pleased to have a description of the heating apparatus.]

MEALY-BUG. — In a recent number of the Journal we read, "We know of no means of destroying the mealy-bug, except constant washing with soap or glue-water; and that will only keep the pest under a little."

Now, we will tell your readers what will *kill* mealy-bug, — kerosene. The least possible touch of kerosene, and mealy-bug never moves again.

"But," say your readers, "it will kill my plants too." Not a bit of it, if you will use a little thought. In the first place, as a general rule, *fully-developed* foliage of almost all things grown under glass is not injured with its application; but soft, very sappy, green, tender leaves, when in a growing state, are injured *if* the kerosene be used in a pure state. Now, to avoid this injury, it should be diluted with water, say one part kerosene with two parts water; and, if things acted on are very delicate, use more water. Now, water and kerosene will not mix! What is to be done now? Add soap to the kerosene *first*, and then add the water, and the combination will be complete. Kerosene pure on a bunch of green or ripe grapes won't injure it nor its foliage when the fruit is ripe. It will not injure full-grown camellia-leaves, and a host of other things we can mention, if you know when to apply it; and this we have hinted at, and leave the rest in the hands of gardeners and amateurs. Whale-oil soap, perhaps, is the best to be used as an alkali for the kerosene ingrediation, with water. Now, in plant-houses which are much infested with mealy-bug, and when it is found necessary to paint such, in place of using the ordinary linseed-oil, use kerosene with the lead. Wash all wood-work with kerosene when an opportunity presents itself. Vines after pruning, washed with pure kerosene, are not injured, and the kerosene will penetrate where other washes prove unable. Orange and lemon trees stand the pure kerosene well when the growth is fully hardened.

For *Combretum purpureum*, *Bignonia venusta*, *Stephanotus floribunda*, and a host of such plants, kerosene can be used pure with impunity. Now, we hope your readers will not go blindly to work, and then lay the fault of injudicious management on our shoulders.

John Ellis.

SPECIALTIES IN HORTICULTURE. — The distinguished agricultural editor of a leading paper recently made the following denunciation of all specialties in agriculture : —

“We protest against young men getting land, and going to work with one idea. The age calls for a full development of their minds ; and, to secure it, their labors and aims must be diversified. The instances where men are either satisfied or successful in special farming are very few. Even dairy-farming, which is more successful than any other, gives the house a look of dilapidation ; and frequently there are grease-spots on the front-door. Notoriously special fruit-growers are disappointed ; and we have yet to see a dozen who have got rich at the business, while there are tens and tens of thousands of general farmers who have accumulated from ten to fifty thousand dollars each.”

The writer of this extraordinary paragraph must have spent his life upon the prairies, or in the forest, or somewhere away from the great centres of population ; and hence has never been witness to the countless illustrations of that special terra-culture which is practised upon thousands of acres around every great city, and without which the population of those cities would perish of famine. I cannot imagine how so much oblivion of well-known facts could exist, except from gross ignorance of the subject on which he writes so positively, and of which one who sets up to be a teacher of others should be better informed. There is a cloud of witnesses, in a thousand localities all over this broad land, whose life-long experience contradicts him. It is a mistake to say that there are very few “instances where men are either satisfied or successful in special farming.” What is raising stock but special farming ? and how would the people of this country be fed if stock-raising as a specialty were abandoned ? If it were not successful and satisfactory to those engaged in it, why do they continue it as such ? It is notorious that great fortunes have resulted from attention to this branch of farming to the exclusion of all others. It has been so from the days of the patriarchs to the present time.

What is the enormous nursery-business now carried on in almost every State but special farming, — the appropriation of land to the single purpose of producing plants ? Thirty years ago, two-thirds of the present nurseries had no existence : those then in operation were insignificant establishments. But the nurseries of the present day are colossal enterprises ; a single one embracing more ground than twenty of the older ones, and crowded with hundreds of new and valuable varieties of trees and shrubbery. Capital without stint is invested in them. Where, in former years, there was a solitary row of cheap hot-beds, there are now long ranges of elaborate forcing-houses ; a single establishment having acres under glass. During the past year, from Rochester and Syracuse alone, five thousand tons of trees were freighted over the Central Railroad, the net value of which was a million of dollars. A single nursery at Rochester contains over four hundred acres, and employs a hundred and forty men. Seven others in the same vicinity contain nearly thirteen hundred acres more. All these are instances of strictly special farming. Are the proprietors of these establishments “satisfied or successful” ? and, if not, why do they continue them ? Can any other seventeen hundred acres be found, in this country, which yield a mil-

lion dollars' worth of products annually? Yet all this is clearly "getting land, and going to work with one idea." Is it possible for error to be more thoroughly contradicted and exploded?

Then in close neighborhood to these great establishments is a tract of twenty-three acres devoted to growing flower-seeds. Here is another case of "special farming;" more "getting land, and going to work with one idea;" and, more hopeless than all, that idea being the apparently two-penny one of raising flower-seeds. Yet from very small beginnings this has grown to an enormous business, giving ample evidence that the proprietor is both "satisfied" and "successful." It requires fifty persons merely to pack up the seeds and fill the orders, which pour in by mail at a rate requiring three persons to open the letters containing them. But there are specialties beside which even this floral cornucopia dwindles into a small affair. There is in Pennsylvania a tract of over four hundred acres, all which is devoted to "special farming," the production of all kinds of garden-seeds. The proprietors, father and son, have been more than half a century engaged in this employment, and have been both satisfied and successful. The father got land, and "went to work with one idea;" only one, remember,—that of producing seeds: and, from the twenty acres upon which he began, the business has grown up to an extent requiring twenty times twenty acres. The "one idea," thoroughly carried out, accomplished this result.

But the agriculture of our country abounds with examples of success which disprove the extraordinary position of the writer quoted above. The one idea so condemned is the prime essential to success. The beginner must have definite plans. He needs concentration, not diffusion: his aims and labors must *not* be "diversified." There are repeated instances of men "getting land, and going to work with one idea,"—that of raising only tomatoes, asparagus, or even horse-radish,—and getting rich. These instances are being annually multiplied in number. It is notorious that those onion-growers whose "special farming" is the production of that vegetable, invariably succeed better than those who diversify their labors with attention to a dozen others. There are men near the great cities who produce nothing but lettuce. Close attention to this "one idea" has made them masters of the art of producing an article so perfect, that the demand is unlimited, and the reward is a golden success.

But foreigners exceed us in devotion to the one idea of special farming. Their horticultural practice is an epitome of specialties. A recent traveller furnishes the following notes upon the subject:—

"The visitor who passes through the markets of Paris cannot fail to be struck by the size and beauty of the fruits and vegetables displayed. There are huge and perfect pears, a glistening array of salads, enormous heads of snowy cauliflower, and giant stalks of asparagus, which attract attention no less for their size and faultless condition than for vast quantities, all equally fine and large of their kind. These are due to the wonderful skill and patient industry of the French gardeners, who are unequalled by any others, either here or in Europe, in the art of cultivating market produce. One cause of this superiority is the devotion of the French to specialties. This system obtains as generally among the gardeners as among the men of arts and sciences. An American market

farmer or gardener divides his ground into many lots, and plants nearly every variety of truck known to the market. The French gardener gives himself up to the cultivation of a special class or succession of fruits or vegetables, and by long study and practice, by experimenting with various manures, soils, and modes of culture, arrives at the production of a perfect crop of his specialty, season after season, with unerring certainty. He is also much more economical of space and more prodigal of labor than we are ; more so than we need to be. He seldom suffers his ground to lie fallow. Crop succeeds crop in endless rotation. The cauliflower is set among the melon-hills, ready to spread as soon as the melons are gathered. Between the rows of asparagus are planted early potatoes and lettuce, in such a manner as to keep the ground constantly fruitful ; and when the weather becomes frosty, and the sun loses a goodly share of its forcing power, large bell-glasses are employed, one of which is placed over each plant, — especially in the case of the salads, — and heat is thus concentrated upon it until its full growth is fairly attained. The enormous size of the French asparagus is chiefly due to the manner of planting. Instead of setting the plants closely together, as we do, a space of at least six inches square is allowed to each stool, which enables it to suck a large amount of nutriment from the soil, and become a strong and solid plant. Each stool is also manured repeatedly every season ; the soil being carefully scraped away down to the roots, the compost placed around them, and the earth put back again."

But "notoriously special fruit-growers are disappointed ; and we have yet to see a dozen who have got rich at the business." Now, there are owners of vast orchards in the State of New York whose annual clear income from the apple-crop alone amounts to many thousand dollars. No general farming can compete with them. So reliable is the return from this crop in various sections of that State, that new orchards of thousand of trees are annually planted. The people of the Middle States rely upon the crop of New York for their supply of apples, just as New England looks to New Jersey for the sweet-potato.

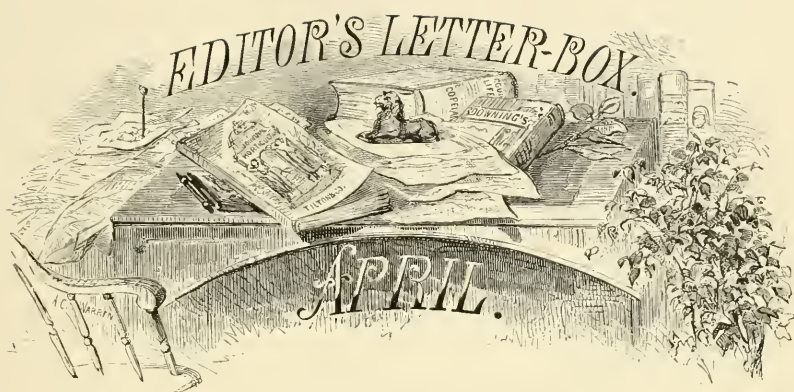
Who has not heard of the enormous peach-orchards of Delaware, a single one embracing five hundred to a thousand acres, and clearing an independent fortune in a single season ? These "notoriously special fruit-growers" employed their own steamboats to convey their gold-bearing freight to Philadelphia, and there chartered successive trains of cars for New York, exclusively for their own productions. Yet, after paying the cost of this expensive machinery of transportation, it is well known that the residuum of profit was such as to make them entirely satisfied with the result. The man who in Delaware is "getting land, and going to work with one idea," if it be that of raising peaches, may safely run in debt for land, provided he begins with planting trees. He may freely give bond and mortgage of his farm ; and the seller will consider himself safe in thus disposing of it, being well aware that the new peach-orchard will prove to be a responsible guaranty for payment of the mortgage. All this is well understood and constantly acted on in Delaware. But as facilities for reaching distant markets are being constantly multiplied, so the peach-grower is able to supply them at less cost of transportation ; while the superior condition in which his fruit is delivered there by these quicker lines of travel secures for him a

better price. Here, then, is striking evidence that special fruit-growers are notoriously successful, not notoriously disappointed.

The columns of every agricultural journal furnish numerous well-authenticated statements of high profits yielded exclusively from special fruit-culture. Careful cultivators of strawberries, who keep off the runners, are producing from two to four thousand quarts of splendid fruit per acre. I have seen fields thus cultivated which have produced a clear profit of five hundred dollars per acre. I have known three thousand dollars, clear of all cost of picking and marketing, to be realized from twenty-five acres, even when cultivated on the broadcast system, with no runners removed. All the other berries are made equally remunerative; and the testimony is uniformly in one direction, — that where the attention has been concentrated on one or two special fruits, there the highest return has been secured. If this employment were not remunerative, the nurseries would speedily die out, as neither plants nor trees would be wanted. But the establishment of new ones and the enlargement of others prove that our people do not believe that “their labors and aims must be diversified.” They have satisfied themselves that specialties are eminently profitable, and specialties they intend to prosecute.

No American writer should discourage the cultivation of the luscious fruits which Providence has created for our health and gratification; least of all by sweeping statements of its being a losing business. There are thousands of deserving families with moderate means, who, by such employment, could support themselves more easily, and with more uniform certainty, than by any other. They should be cheered on to thus use their little means, rather than discouraged. Such writers, however, may truthfully assert that all are not successful, as various cases of disappointment have come within my observation. In no human enterprise is success universal. If some fail at fruit-growing, so do others at ordinary farming. Equally unfortunate are another class when applying themselves to ordinary traffic. But, granted that fruit-culture is a paying employment, it must be the man, and not the business, at whose door the failure should be laid. The demand for fruit enlarges annually, and prices of all varieties continue to rise. Thirty years ago, it was difficult to sell even moderate quantities of strawberries at over sixpence a quart; but how stands the market now, in the face of a production whose increased magnitude cannot be even estimated? It is an accepted maxim of trade, that men lose by buying in a *falling* market; but that, to be successful, they must purchase in a *rising* one. Such, unquestionably, is the fruit-market of this country; and into the supplying of it there is absolute safety in embarking. The occasional gluts of former years have ceased. New buyers, in the shape of great canning establishments, now stand ready to clear the most over-crowded market when prices rule low. The single condition for securing an ample profit is that we shall produce a first-class article, whether it be pear or blackberry.

Zoilus.



THE Editors of "The American Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulturists.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

E. W., Newark, N.J. — Is the Lady of the Lake a new strawberry? — Yes, rather so. Raised in 1862. Is it a valuable variety for market-purposes? — We think it will prove so. We have never fruited it ourselves, but have seen it on the grounds of Mr. Scott, who raised it; and we were very much surprised to see the quantity grown to an acre. The color is dark; the fruit rather firm; medium to large size, somewhat uneven in appearance; worthy of trial.

W. S. L., Fostoria, O. — Will you do me the favor to answer the following questions? —

1st, Will dwarf pears generally form standard trees? and how much below the surface should the point of union be planted to secure this result?

2d, What kinds are most likely to make standards if planted for that purpose?

3d, If the dwarf becomes a standard, what effect does that have on the fruit if the quince-roots remain vigorous?

4th, Are such trees as liable to the blight as pear-trees on their own stock?

A large part of the dwarfs will make roots from the pear if pains are taken to secure such a result. To succeed well, the bud should be planted some two inches below the surface; and, when such roots are desired, scrape away the earth, and cut up the bark just above the union-point very much as you would cut a carnation-pink when you are to layer it. Little roots will soon be formed that will develop into very large ones.

The most vigorous sorts are the most likely to make roots from the pears, such as Vicar of Winkfield and Louise Bonne de Jersey.

Soon after the tree is well rooted from the pear, the quince-root decays. We are not aware that there would be much difference in the fruit, except that it often happens that higher-colored fruit is obtained from dwarf trees than from standards.

We cannot see why they are not just as liable to the blight as though grown originally on the pear-root. We have never seen so much blight among dwarfs as among standards; but when the quince-root is decayed, and the tree has become a standard, it is just as liable to the blight as any other standard. We do not believe in changing dwarfs in this way. They do not generally make good roots, but only one or two very large ones, sometimes larger than the tree itself, that run only in one direction; so that when full of fruit or leaves, and there comes a heavy wind, the trees are often blown down. We believe the better way is, if you want standards, plant them; and, if dwarfs, plant *them*. Some years ago, we visited a very fine orchard of dwarfs, and saw here and there a tree that showed signs of unusual vigor, and, on inquiry, was told by the owner that it had made roots from the pear: and he was very sorry, for he should have to dig them up; for they were good for nothing as soon as they ceased to be dwarfs. He spoke of the bad kind of roots they made, and their liability to be blown over and destroyed by the wind.

S. F. T. writes from Hannibal, Mo., "that he has no trouble from mildew on his grape-vines, or rot among his grapes. He selects a piece of ground having good natural drainage, prepares the land by ploughing or stirring it to the depth of fifteen inches, and sets the vines. Ploughs or digs rather deeply among the vines in spring, and cultivates lightly through the summer to kill weeds and keep the surface loose. Does all the summer-pruning before the middle of July."

[This looks easy enough, surely. We should object to the deep ploughing, however; for it cannot be done without injury to the roots of the vines. We use a cultivator, and run it lightly in our vineyard. It would be better for the vines to do the work by hand, using a fork with short tines. — Ed.]

W. E. DODGE of Fredonia, N.Y., writes, "Enclosed please find sections of cane from a thornless seedling blackberry which originated with me. You will see by samples that it is as free from thorns as a lilac or currant bush, and may be handled with the same impunity. The fruit is large, oblong-oval, very firm until over-ripe; large seed-cells like the Lawton, but it is a much sweeter berry; canes dark colored; strong erect grower, not over tall; is a prolific bearer; perfectly hardy. It stood the two past severe winters without protection, starting vigorously even to the terminal buds."

[We were pleased to receive the cuttings, and see for ourselves that blackberry-bushes can be grown without thorns. We have frequently said, that, when a good blackberry could be produced without thorns, we should cultivate this fruit with a satisfaction we have never yet experienced. We know nothing of the size or quality of the fruit from actual observation; but, if it shall prove equal in these respects to the Dorchester or Lawton, it will certainly be a great acquisition. One great objection to cultivating the blackberry heretofore has been the thorns. — ED.]

G. C. B., Maine. — Why not cut scions from a tree when frozen? What damage is done the tree? — We know of no good reason why scions may not safely be cut when frozen. "The proof of the pudding is in the eating." We have cut scions for many years under such circumstances, and we know they have done well. We never knew that any damage came to our trees in consequence of cutting scions when frozen. If any of our readers have suffered from such cause, we should be pleased to have them say so.

What is the best aspect for apple and pear trees, — northern, north-eastern, eastern, southern, south-western, western, or north-western? — We should prefer, in New England certainly, southern, south-western, or western, in the order named. The reason why we should is because our trees would thus be protected from the cold winds in winter, and the sweeping winds and heavy storms in summer and fall. In our own orchard we have many trees planted on each of the exposures named, because we have planted entirely round a hill; and we most decidedly prefer the southern aspect. We cannot say that it makes so much difference with apple-trees as with pears. Many persons recommend a northern exposure for peaches, that the time of blooming may be retarded for fear of late frosts.

H. C. G., Providence, R.I. — Do you consider the Fillmore Strawberry a valuable variety? — No. We cultivated it for several years, and at last discarded it as nearly worthless for Massachusetts. It proved a poor bearer, the quality only ordinary; and, besides, it was hard to hull.

BEGINNER. — When ought peach-trees to be headed in? — Shorten last year's growth just before the buds start in the spring.

L. H., Bridgeport, Conn. — What varieties of squashes shall I raise? — The Hubbard, Boston Marrow, and Canada Crookneck.

The following communication has been handed us by Prof. Gray: —

DAYTON, O., Dec. 31, 1867.

PROF. ASA GRAY. *Sir*,—With this you will receive a portion of a plant which has lately exhibited a curious freak of nature. It has been cultivated here by many persons for several years, and has never been known to bloom when growing in soil; but, in the latter part of October, the vine was cut down and carried in the house, and hung up over picture-frames on the wall in a room, where, until lately, there has been no fire. In about three weeks it commenced to bloom, and has put forth fresh flowers ever since. It has been in bloom now for six or seven weeks. The leaves that were on when the vine was cut wilted and died; but fresh leaves and smaller put out, and the vine also grew in length. The vine is known here as “water or glacier ivy.” Have found it to belong to the *compositæ*, but cannot trace it farther.

I would be much obliged if you can give me the botanical name at your earliest convenience. Yours truly, LOUIS H. BROWN.

[The plant is what we call “German Ivy,”—the *Senecio scandens* I take it to be.] A. GRAY.

WE publish with pleasure the following extract from a letter from an esteemed correspondent: —

“Pray do correct your contributor, who says (p. 327), ‘The first fern-cases made and brought before the public were at the great World’s Fair in England in 1851. They were simple glass-shades,’ &c. If Wardian cases are meant, the first account of them, and of that mode of cultivation, was published by Mr. Ward, in the ‘Companion to the Botanical Magazine,’ in 1836; the first edition of his book on the subject, in 1842.”

G. R. M., North Pass Island, Lake Erie. — Has the Pemberton Pear, figured in the November number of the Journal, been grown as a dwarf? — We think not. Of whom can trees or scions be procured? — There are no trees for sale. B. T. Wells of Boston advertises, in our advertising pages, scions of this sort. Where can Italian dwarf peach-trees be obtained? — Of Hoopes Brothers & Thomas, West Chester, Penn. Where can I procure a small lot of borage-seed? — Washburn & Co. of Boston have it. Any of the principal seedsmen will furnish it.

R. B. E., East Bridgewater, Mass. — The season in Massachusetts is rather short for tuberoses to bloom in the open air from bulbs planted in the border in May. The flowers are liable to be cut off by the autumn frosts. If started in pots in a hot-bed about May 1, they may be turned out into the border, and will bloom strongly in September. For directions, see Rand’s “Flowers for the Parlor and Garden,” which we have sent as ordered.

LOWELL. — *Achænia malvaviscus* may be found at any greenhouse. Send to Washburn & Co., 100 Tremont Street, Boston, who can probably find you a plant. Price fifty to seventy-five cents for small plants.

P. I. T., Wilkins, near Pittsburg, Penn. — Annuals are not fitted for bouquets such as you wish. They fade too soon, and remain in bloom too short a time. Bedding-plants, such as verbenas, salvias, heliotropes, do better for such purposes. The following annuals are very pretty, however, and do well to make a variety : —

Abronia umbellata, *Ageratum* in sorts, *Asters* in sorts, *Brachycome iberidifolia*, *Browallia elata*, Canary-bird flower, *Clintonia*, *Didiscus cœruleus*, Sweet alyssum, Candytuft, Larkspurs, *Sweet-pease*, Mignonette, *Lobelia gracilis* and *erinus*, Nasturtiums in variety, *Phlox Drummondii*, *Dianthus Heddwigii*, *Salpiglossis*. Ten weeks' stock.

WE learn from an esteemed correspondent, and have also seen noticed in the daily papers, that Hon. Marshall P. Wilder has presented to the Massachusetts Agricultural College a large collection of choice greenhouse-plants.

Mr. Wilder has ever taken the deepest interest in the prosperity of this institution ; and indeed it is to his exertions that much of its present success can be ascribed. The present collection shows that he feels no lack of interest, embracing as it does some thousand plants, many of them large specimens of choice camellias, among which are specimens of all of Mr. Wilder's seedlings, — both those which have been before the public, and many others which are not yet in the market.

In addition to the greenhouse-plants, Mr. Wilder has also given many hardy herbaceous plants and bulbs for the use of the gardens appertaining to the college.

The greenhouses are a credit to the State of Massachusetts, elegant in design and appointment ; and, when fully completed according to the original design, will be among the finest in the country.

Other gentlemen have also contributed to this object ; but there is still room for the reception of choice plants.

IDEM. — Gloxinias, achimenes, and gesneras are not generally suitable for parlor-culture. They may, however, succeed in a Wardian case with free ventilation. If grown in a greenhouse, and brought into the house when just coming into bloom, they remain long in perfection. For general culture, see Rand's "Bulbs."

F. M. T., Aylmer, Ontario, U.C. — Camellias are propagated by grafting or inarching in the usual way. They are also raised from seed, and increased by leaves with a bud at the base, inserted in silver sand, and covered with a bell-glass. The soil for camellias is well-rotted turfs and silver sand. Attention must be given to secure good drainage.

M. O'KEEFE, SON, & CO., Rochester, N.Y. — Communication mislaid. What you call the "California Rock Rose, or *Semper Vives*," is *Lycopodium lepidophyllum*. Thorburn of New York has a quantity of the dry plants : the living you can obtain of any one growing ferns and mosses.

H. G. J., Amherst, Mass. — There is no work such as you need. Mr. Rand has an elaborate work on greenhouse-plants in preparation, which is complete as far as the letter D. The first part, A to I, may possibly be published next autumn, to be followed by the second part in the spring of 1869.

The "Treasury of Botany" can be furnished you at this office. It is a very useful and interesting volume.

Don's "Gardener's Dictionary" gives all the information you need; but it is in four quarto volumes, and incomplete at that.

Paxton's "Botanical Dictionary" (now out of print) would serve your purpose if you could find a copy.

THE following is a sample of many anonymous communications we receive. We require in all cases the name of a correspondent, not for publication, but as a guaranty of good faith.

"JAN. 17, 1868.

"*Messrs. Editors*, — Noticing your article in the January number upon rhododendrons, I am very anxious to obtain plants. Where can they be procured in this country? My Japan lilies do very badly. What is the best plan to pursue after they have done blooming? I was so disappointed in my scarlet sages! They gave no bloom; yet I gave them every attention, and got plants from reliable dealers.

"KING."

[If the writer of the above has read our pages, he must have observed what we have repeatedly stated; viz., that anonymous communications are not entitled to reply.]

MANY SUBSCRIBERS. — We have numerous applications requesting descriptions and estimates for forcing-pits, greenhouses, and conservatories. If our readers will give the subject a moment's thought, they will see the impossibility of our giving a satisfactory answer, unless we are made acquainted with the location of the proposed building, the general uses for which it is required, the cost of materials in the place of erection, and such like details. The request, "Please send me a plan of a greenhouse," is so very suggestive, that we cannot answer it.

S. M. C., Taunton, Mass. — The English and American yew would both be hardy with you; but the former would never become a tree, and in cold weather might be a little touched. The American is only a straggling bush. The golden yew is hardy and very ornamental.

J. S. P., Watertown, N.Y. — What is the largest and best drumhead cabbage? — The largest is what is called the Marblehead Mammoth. One of the best for profit is the Mason Drumhead. The best cabbage for any one's own table is the Savoy.

MARKET-GARDENER, Westchester, N.Y. — Can I do better than to plant Myatt's Victoria Rhubarb for market-purposes? — We think not. It is as good as or better than any large variety with which we are acquainted.

MAY.



HOW A SMALL FARM WAS MANAGED.

(Continued.)

THE warm sun and genial showers upon land well enriched soon caused the weeds to start, and we had plenty of work on hand. We did all we could among our strawberries with the hoe ; but some hand-work was required. They did well, and covered the ground. Most of our standard pear-trees lived, and all the dwarfs. The raspberry, blackberry, and currant bushes grew quite as well as we expected. The grapes did not come fully up to our expectations ; for mildew affected the foliage very much. We dusted them over once or twice with sulphur, and then gave it up, and resolved to let them take their chance. We tied up the new growth to the posts and trellises from time to time as it became necessary. The asparagus seemed to flourish through the summer, receiving frequent hoeings ; and, on the approach of winter, it was well covered with horse-manure. The tomato-crop was a success, and the income derived from it a great help. Autumn had come, and we had received but very little income from our farm of forty acres : but we were not discouraged ; for we had planted in faith, and expected to wait patiently for results.

On the approach of winter, the strawberries, after they had been carefully weeded out, were covered with coarse, strawy horse-manure ; care being used that it was not put on so thickly as to smother the vines. The raspberries were all laid down, and covered with earth ; the grape-vines likewise : a part of the blackberries were treated in the same way, and those did well ; but those that were left up winter-killed, so that they gave but little fruit the next season. From our experience year by year, we are of the opinion that it is far better to lay down the canes, and cover them in winter. All our land was ploughed so as to cover up and destroy all the weeds that live through the winter and start early in spring. The winter was devoted to carting manure, and the care of the hot-beds where lettuce was so successfully grown. Early in spring, we headed in our pear-trees where they had made excessive growth or a straggling branch. As soon as the season was well opened, — say by the 10th of April, — we raked off the manure from the strawberry-beds, placing it around the pear-trees, where it answered an excellent purpose as a mulch. Soon after, the blackberry and raspberry bushes were lifted and tied up to the stakes or wires. The land among the trees was ploughed as well as that among the grapes ; though we run lightly through the latter, for fear of destroying the roots that had come near the surface. We also run the plough lightly over the asparagus-bed, lifted our grape-vines, and got every thing ready for the growing season. Before the strawberries began to bloom, they were carefully weeded out ; the walks having been cut out and the plants used for new plantations so far as needed, and the surplus sold at remunerative prices. Each year, manure was used in the same liberal manner as at first ; we having started with the belief, that, if we could not succeed under such a system, we could not at all. We pass over the spring work, and find ourselves busy the last of June in picking and marketing the abundant crop of strawberries that kind Nature gave us. We had planted for market-purposes principally, and had set those sorts that would give us the largest number of quarts. The Brighton Pine ripened first ; soon to be followed by the Wilson, a very productive and profitable variety, but a very poor one to eat. Near the very last of June came along the Hovey Seedling, large, handsome, productive when rightly treated, profitable and good. The yield, though not up to that claimed by the Belmont growers, was good ; being a little over four

thousand quarts to the acre. The Wilson gave the largest quantity in proportion to the land occupied. The average price of all the fruit was twenty cents ; making eight hundred dollars per acre, or four thousand eight hundred dollars for the six acres exclusively devoted to this crop ; which, added to the sum of two thousand dollars received for the same fruit grown among the pear-trees, made the nice large sum of sixty-eight hundred dollars : a profitable crop surely, one will say ; and we cannot deny it, though there was a great deal of work connected with it, and a large outlay for manure, boxes in which to put the fruit, and other things. No sooner was the crop well gathered than we put in the plough and turned the beds over, and set out cabbages on the land. We had determined not to attempt to raise but one crop of strawberries on the same vines : it costs a good deal to keep the old beds free of weeds if they are left, and they often so kill out in winter as to be of no value. The raspberries gave a moderate crop ; which sold well, as most market-gardeners seem to have neglected them of late. The blackberry-bushes that had been covered gave fair results ; though none of us enjoyed the picking of the fruit, on account of the thorns : those that were left up during the winter produced scarcely a perfect berry, and the crop was a failure. The grape-vines were carefully looked after and made fine growth, except the Delawares, which mildewed, and failed to ripen the wood well. A few bunches of fruit were allowed to set on some of the vines ; for we, like all beginners, were anxious to eat of the fruit of our own vines.

The second season passed, and we prepared for winter very much as we had done before. Our trees and plants had done as well as we could reasonably expect. All our land had been used to the best advantage, as we thought ; and we had no reason to complain of the crops. The third year found us with fewer acres devoted to strawberries : and it proved to be fortunate that it was so ; for the severe drought cut short the crop, so that, even though the fruit brought a high price, the proceeds were quite small. But what was unfavorable for this fruit was favorable for grapes : and so we allowed our vines, though only four years old, to set a large crop of fruit, which ripened up well, and sold for twenty cents a pound on an average in Boston market ; some single vines yielding twenty pounds of fruit. The raspberries and blackberries were a rather poor crop for the same reason

that the strawberries were short. We had cut the asparagus to a limited extent, and realized something from that crop for the first time. The usual routine of labor was performed through the season, and the same care taken with the vines and bushes as in years previous. Up to this time, we had not received as many dollars from our farm as we had paid out ; but we knew that success would certainly follow if we held on, and worked diligently.

The fourth year opened with bright expectations. After the crop had been sold from the hot-beds, we began to cut freely from our asparagus, which, though not properly connected with a fruit-farm any more than the lettuce, yet, as it is a profitable crop, we saw no reason why we should not grow it. The asparagus was soon followed by strawberries ; then raspberries, blackberries, and an abundant supply of currants. The season proved to be unusually wet : the fruit was large, but not particularly high flavored. The dwarf pears gave some fruit. The grapes — where were they ? What a sight was presented to the beholder ! The Concords, which had been regarded as the most hardy of all, rotted so badly as to be nearly worthless. The Hartford Prolific were a little better, it is true ; but most of the crop was a failure. The Delaware failed altogether, as did most all the others ; so that there were actually tons of grapes that rotted and fell to the ground, while the foliage was in great part destroyed by mildew. We now became convinced that we had pursued a very foolish course in allowing our vines to bear so heavily the year before, when they were too young to carry such a crop. They had been over-tasked, and could not withstand the mildew and rot ; which evils were greatly increased, if not in part induced, by the unfavorable weather. We stirred the soil around the vines frequently to keep down the weeds : but we thought that the vines suffered the more when this was done ; for the ground seemed the more readily to absorb the moisture. We came to the conclusion that it is possible to cultivate grapes too much, especially in wet seasons. During all these years, we had pinched in the vines, and kept even the most rampant growers rather short. We let them make more wood during this wet season than ever before ; though it did not ripen well, and much of it was killed during the succeeding winter. We had now been long enough in the business of fruit-growing to understand it very well, and we had met with a reasonable degree of success. Hard

work was required, and constant looking after the men and children employed. Each year, our pear-trees had been growing larger and older; and we could reasonably expect, in a few years more, some income from them. We will not weary the patience of our readers with further details of our operations on our small farm. We had found it a profitable business. Not that every thing we had planted had proved profitable every year. Droughts and floods will come, one to parch, the other to drown, the crop; yet enough will be spared. We are fully convinced, after years of experience, that, for the capital invested, fruit-growing pays very much better than ordinary farming, and quite as well as the average of investments in the various branches of trade and business. Of the strawberry-crop, we have no doubt it will pay a better profit than almost any other. There is no limit to the demand, and that, too, at such prices as will reward the grower. The results we have described may be attained by anybody who has sufficient capital and a fair share of energy. The raspberry, though not so sure nor so profitable as the strawberry, is a good fruit to raise for market, and paid us well. We cannot say as much of the blackberry from our experience. The currant-crop is a good one; for the fruit will always sell, if good, at fair prices. In planting for market, we should select the largest and best sorts: size will attract, even though the fruit may not be of the very highest quality. To those who are asking questions as regards the cultivation of fruit near the cities, we will say, in conclusion, Select a good location not too far from a market, plant judiciously, and you will be sure to reap a substantial reward. The success that has attended the labors of those now engaged in fruit-growing should encourage others to take hold of the good work.

PREPARATION OF MANURES.

THE intelligent horticulturist or farmer will be careful not to use manure until it has been thrown over and well pulverized. It is far better for many purposes about the garden that the manure should be two or more years old and well rotted. It cannot be too fine; for, the finer it is, the more quickly and fully will one get the benefit of it.

THE CLEMATIS.

THIS is a very showy genus, belonging to the Ranunculus family (*Ranunculaceæ*); and contains many of our most ornamental hardy plants.

The species are either herbaceous or shrubby climbers, supporting themselves by the leaf-stalk curling around any adjacent object; the stem itself never twining.

The most common species with us is *C. Virginiana*, often known as "Traveller's Joy" or "Virgin's Bower;" which is a rampant climber, covering bushes in low woods or roadsides with axillary panicles of simple white flowers, which are followed by showy feathery tails surrounding the seed. This species is by no means inelegant in cultivation, and, if planted in rich, deep loam, will soon cover a trellis; and as it is a clean plant, and seldom eaten by insects, it is desirable for training over a cottage-door or around the windows.

It may be raised from seed, or is easily transplanted.

C. verticillaris, often known as *Atragene Americana*, is a very beautiful but somewhat rare indigenous plant. Like the last species, it is a climber, though of low growth; but differs entirely in the blossom, which is large, often three inches in diameter, and of a bluish-purple color.

Our other indigenous species are *C. ochroleuca*, an herbaceous species with greenish flowers, and *C. Viorna*, *cylindrica*, and *Pitcheri*, all climbers with purplish flowers. None of these are found in New England, but are generally Southern or Western species.

The herbaceous species generally seen in our gardens are *C. erecta*, *maritima*, and *angustifolia*, with white flowers; and *C. integrifolia tubulosa Hendersoni* and *hybrida* (of which the two last are hybrids), with blue or rather purple flowers. These, as a class, require only the treatment generally given to herbaceous plants. They do well in common garden-soil, and are easily increased by division in spring, just as the plants begin to grow. There is a double variety of *C. erecta*, which is said to be very handsome; the flowers resembling those of the plant known as "Fair Maids of France" (*Ranunculus aconitifolius*). The species of clematis with woody climbing stems are very numerous. Many are stove or greenhouse plants; but by far the larger portion are hardy or half-hardy climbers.



The most common exotic species is *C. viticella*, a native of Spain, but perfectly hardy. It is rather a free grower, often reaching twenty feet in height ; and the small purple flowers are freely produced on nodding peduncles. The plant is handsome and desirable ; and there are species with blue, dull red, and double purple flowers.

The handsomest species, however, of all which may be considered perfectly hardy in New England, is *C. azurca grandiflora*, or, as sometimes known, *cærulea grandiflora* or *patens*. It is not extravagant praise to call it our handsomest hardy climbing shrub ; in which opinion all who have seen a large plant in full blossom will readily coincide. The flowers are borne profusely on the well-ripened wood of the last year all over the plant ; are often five inches in diameter ; of a rich purple when first open, but gradually fade to a light lavender color. They remain in perfection many days ; and, as there are flowers of all ages on the plant at the same time, the effect is very brilliant. *C. Sophia*, a hybrid variety, has even larger flowers of a delicate lavender, with white bands down the centre of the flower, forming a star. The double variety is very beautiful. *C. montana*, a native of Nepaul, is generally hardy : the flowers are white, and very pretty.

C. flammula, indigenous to France and the south of Europe, is a perfectly hardy species, with white flowers somewhat resembling those of our common wild species, but deliciously fragrant. This is a very useful plant for covering trellises or out-buildings, as it grows very freely, has neat ever-green foliage, and, when in flower, is a mass of fragrant blossoms, which remain long in perfection.

There is a variety (*C. f. rubella*) with rosy flowers.

C. florida, from Japan, has white flowers, and is precariously hardy. The variety with double flowers is very handsome.

C. Sieboldii is a very fine variety, in which the colors — white, violet, and green — contrast finely.

C. lanuginosa, a Japan species, has very large blue flowers, and is a showy plant, but is not hardy with us : it is, however, well worthy greenhouse culture.

It is by crossing this species with *C. viticella* that a new race of clematis has been created, differing much in habit from the parents, and excelling them in brilliancy of flower.

Messrs. Jackman and Son of Woking, Surrey, Eng., are the originators

of these plants ; the two best known of which are *C. Jackmani* and *rubro violacea*. In size they are fully equal to the one parent, while they combine the colors of both. *C. rubella* and *lanuginosa candida* and *nivea* are fine hybrids, — the former with maroon velvet, and the two latter with white flowers.

There is a great difference in the blooming of clematis : some only flower on the old well-ripened wood of the last year, as *azurea grandiflora* and *Fortunii* (a fine white-flowering species) ; but others, as all the *viticella* group, blossom freely on the spring growth. This fact should be borne in mind in pruning, which should never be done until the buds begin to swell in the spring, as before this it is very difficult to distinguish the dead wood from the living, especially if any part have been winter-killed. These hybrids of Messrs. Jackman partake of the *viticella* habit in flowering on the young wood ; and it is by this they that are rendered particularly valuable, as they may thus be had in bloom during all the summer months.

They are recommended for bedding out. The shoots being pegged down to the ground, the eyes starting into growth give a profusion of flower. This mode of growth has been very successful in England, and we intend to give it a fair trial the present summer.

The treatment is very simple. The plants should be set very closely, about eighteen inches apart, in rich loam well manured : as the shoots progress, they should be pegged down ; and in autumn a good covering of coarse litter or leaves should be put over the whole bed.

Another method is to tie the plant to a stake ; and in autumn cut the ties, and, allowing the plant to fall to the ground, to cover as above.

The subject of our illustration is a new English seedling, of a light grayish-blue color and fine cup-shaped form, called *Lady Bovill*, also a seedling of Messrs. Jackman.

Clematis may be increased by seed or by cuttings, in sandy loam under a bell-glass with slight bottom-heat.

In conclusion, we urge on all who have a spare trellis to plant one or more *Clematis*. For general cultivation, *C. azurea grandiflora* is the best and most showy ; and yet we should hardly know how to be without the pretty *viticella* group, or the fragrant blossoms of *C. flammula*.

E. S. R., Jun.

THE KENTISH OR EARLY RICHMOND CHERRY.

HERE in Illinois, and I presume elsewhere, there has been considerable discussion as to the true nomenclature of a very popular cherry, whose great hardiness and productiveness in the not very congenial soils of our rich, wet prairies, have overcome any doubts as to its desirableness as a table-fruit. It is uniformly successful, from the low prairies that lie around Chicago, queen of lake cities, to the rock-hills that lie behind the Occidental Cairo ; from the wet lands of Champaign County to the high, dry bluffs of Quincy.

In this paper I propose to trace back its name and origin, from which the reader may judge whether the name of Early May, met with in a few sections, the quite prevalent one of Early Richmond, or the English one of Kentish, has the best title to the fruit.

F. R. Elliott, in "The Horticulturist" for October, 1867, gives the latest description of Early Richmond : "The tree is a free grower, spreading and drooping in habit ; spray abundant ; *leaf* a dark, rich, shining green, broad, oval, acute, pointed at apex ; serratures regular, nearly every other one is deepest ; petioles medium length, green ; *fruit* of medium size, borne in pairs, round, bright, rich, clear red, becoming darker as it hangs on the tree. Although it is fit to gather in June, it will often hang on until the middle of July. The stone adheres strongly to the stem, so that the fruit may be easily stripped therefrom ; and the corolla almost always remains on the stem, thus marking it. The flesh is of a reddish cast, very juicy and tender, and to many persons' taste a pleasant acid. The stem is set in a deep round basin, very regular."

Downing describes Kentish, in his edition of 1857, "as an old European sort, better known here as the Early Richmond ; is one of the most valuable of the acid cherries. It begins to color about the 20th of May, and may then be used for tarts ; while it will hang upon the tree, gradually growing larger, and losing its acidity, until the last of June, or, in dry seasons, even until July, when it becomes of a rich, sprightly, and excellent acid flavor. The tree grows about eighteen feet high, with a roundish, spreading head ; is exceedingly productive ; and is, from its early maturity, a very profitable

market-fruit, being largely planted for this purpose in New Jersey. This kind is remarkable for the tenacity with which the stone adheres to the stalk. Advantage is taken of this to draw out the stones. The fruit is then exposed to the sun, and becomes one of the most excellent of all dried fruits.

"Fruit, when it first reddens, rather small, but, when fully ripe, of medium size, round, or a little flattened, borne in pairs; skin of a fine bright-red, growing somewhat dark when fully ripe; stalk an inch and a quarter long, rather stout, set in a pretty deep hollow; flesh melting, juicy, and, at maturity, of a sprightly, rather rich acid flavor."

Prince, in his "Pomological Manual," part ii., 1832, describes the Early Richmond: "This variety was brought by the father of the author from Richmond, Va. The tree is thrifty, and attains to the usual size of its class; being generally about fifteen to eighteen feet in height, with a round and well-formed head, rather more spreading than elevated. A part of the branches take a somewhat drooping inclination; but whether this is natural, or is caused by its great crops of fruit, I cannot decide. The fruit is of large size, nearly round, and of a beautiful red color; the flesh exceedingly tender, rich, juicy, of a fine flavor, and pleasant, sprightly acid taste. When fully ripe, if the fingers in plucking the fruit press only upon the flesh, it will strip off, leaving the stone and peduncle attached to the tree: the latter is quite short, and adheres to the branch rather more strongly than is usually the case. The tree is exceedingly productive, and the fruit becomes red nearly or quite as soon as the May Duke; and being in very great estimation for tarts, *et cætera*, it commands a high price at market; and it is said by those who cultivate the trees for that purpose, that they yield a greater profit than any other variety."

Lindley, in his "Guide to the Orchard," 1831, describes the Kentish as follows:—

"*Fruit* middle-sized, round, flattened at both ends; *stalk* one inch and a half long, slender, and sunk in a rather deep hollow; *skin* of a dingy red, slightly marbled with dull brown, and having occasionally a few both opaque and transparent spots; *flesh* rather firm, but succulent, with somewhat astringent but saccharine juice. Ripe about the middle of August.

"This is one of the most common and most hardy cherries cultivated in

this country, the May Duke excepted. It is very probably one of those which were brought from Flanders by Richard Haines about three hundred years ago. Evelyn says, 'It was the plain industry of one Richard Haines, a fruiterer to King Henry VIII., that the fields and environs of about thirty towns in Kent only were planted with fruit-trees from Flanders, to the unusual benefit and general improvement of that county to this day.'

"The trees grow like those of the Morello, with slender branches and shining leaves. The stone is so strongly attached to the stalk as to be drawn by it from the pulp with facility, leaving the fruit apparently whole; a property, I believe, not possessed by any other cherry. In this state it is laid on hair-sieves, and exposed to the sun, where it dries, and becomes a delicious sweetmeat, similar in appearance to that of a large Sultana raisin, and will keep thus for twelve months."

Loudon states in his "Arboretum," vol. ii. p. 696, that "Gerard, in his 'Herbal,' published in 1597, mentions . . . the Flanders or Kentish cherries, of which he says, when they are thoroughly ripe, they 'have a bitter juice, but watery, cold, and moist.'"

This is as far back as my authorities reach, giving us the following names : —

- | | | |
|-------------------------|------------------------------|------------------------|
| 1597. — GERARD | <i>Flanders</i> , Kentish. | |
| 1831. — LINDLEY | <i>Kentish</i> , Flemish. | |
| 1832. — PRINCE | <i>Early Richmond</i> . | |
| | Early Kentish. | |
| | Virginian May. | |
| 1857. — DOWNING | <i>Kentish</i> . | |
| | Virginia May, | } of American gardens. |
| | Early Richmond, | |
| | Kentish, or | } Lindley. |
| | Flemish, | |
| | Common Red, | } of the English. |
| | Sussex, | |
| | Pie-Cherry, | |
| | Kentish Red, | |
| | Montmorency O. Duh., | } of the French. |
| | Montmorency à longue queues, | |
| | Commune, | |
| | Muscat de Prague. | |
| 1867. — ELLIOTT | Early Richmond. | |

Without inquiring into the identity of these varied names, I pass to the more valuable fact, that Lindley, Prince, Downing, and Elliott all describe a cherry whose stone adheres firmly to the stem,—a peculiarity so marked

and unique, that Lindley says he thinks *it is not possessed by any other cherry*. With minor and unimportant differences, they agree in this, — a strong and apparently identifying point of similarity. On one point, however, there appears to be a difference. The time of ripening of the Early Richmond is nearly that of the May Duke. The ripening season of the Kentish, according to Lindley, is considerably later than that of the May Duke : but the tree of the Kentish, as described to me by an Englishman who was familiar with it in his native country, answers completely to that of the Early Richmond ; and, ranking amongst this latter variety, he could see no difference in fruit.

The identity of the Early Richmond and the Early May seems even better established. M. L. Dunlap describes the Early May as follows : —

“Fruit medium ; skin of light red, growing almost black when fully ripe ; and generally the stone adheres to the stem, and can be readily drawn out with it.” C. R. Overman, who brought the so-called Early May from Indiana, said at the meeting of the Illinois State Horticultural Society in 1861, that he could detect no difference between it and the Early Richmond. Samuel Edwards found the Early May and Early Richmond identical at Cincinnati. Lewis Ellsworth said he could discover no difference between them. Mr. Dunlap, and, I believe, Mr. Phœnix, were inclined to believe the Early May rather more “drooping in its habit” than the Early Richmond ; a distinction also drawn by Thompson between the supposed identical varieties of Kentish and Flemish.

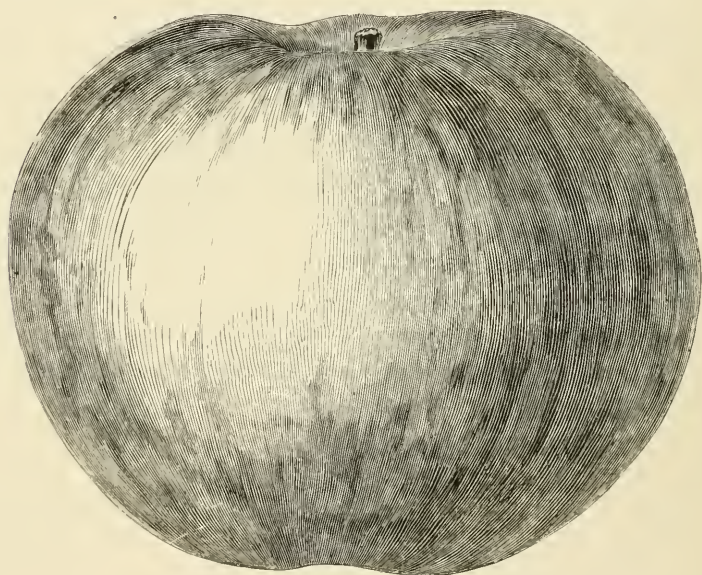
From these considerations, I am led to believe that the Early May of Dunlap and the Early Richmond of Elliott are in all probability the Kentish of Downing and Lindley ; which last name, by virtue of its antiquity, should be the recognized and undisputed one.

But in pomology, as in orthography and other matters, common usage is the supreme law, from which there is no appeal ; and this, I think, is decidedly in favor of Early Richmond.

In conclusion, I would ask of the readers of “The Journal of Horticulture,” who of you have imported the Kentish, and compared it directly with the Early Richmond ? and what are your conclusions ? *W. C. Flagg.*

WASHINGTON APPLE.

THOUGH this variety has been before the public for several years, yet we think it is not so widely known as it deserves so be. Our engraving was made from a fine specimen raised by Thaddeus Clapp of Dorchester, Mass., who has been very successful with this variety. The Washington is said to have originated in Washington County, N.Y., on the farm of Mr. Job Whipple. It is now about twenty years since it was first brought to the notice of pomologists; and yet fruit of this variety is rarely seen in the mar-



ket, and many of the fruit-books are silent in regard to it. The tree is a strong grower, healthy, and a good bearer. Its merits entitle it to a greater popularity than it has yet attained. We copy the following description from "The Magazine of Horticulture" for 1858: "Size large, about three and a half inches broad, and three inches deep; form roundish, slightly swollen on one side, largest in the middle, depressed somewhat at the base, and narrowing to the crown; skin fair, smooth, with an oily touch, with a pale-yellow ground, broken with distinct stripes and splashes of

brilliant red, thickest on the exposed side, and covered with prominent yellow dots ; stem short, less than half an inch long, stout, and inserted in a small, contracted, and rather shallow cavity ; eye rather large, closed, and considerably sunk in an abruptly depressed and somewhat furrowed basin ; segments of the calyx broad and slightly woolly ; flesh yellowish, a little coarse, crisp, and tender ; juice abundant, with a rich admixture of sweet and acid, and high flavored ; core medium size ; seeds medium size, long, and very pointed. Ripe in September and October."

If any of our readers can give any further information concerning this valuable apple, we shall be pleased to hear from them.

Q U I N C E S.

A FEW years ago, this fruit was easily grown ; and large quantities found their way into the great cities, where they were sold at moderate prices : but latterly they have failed, and, like the apple, have been scarce and high. The quince seems to flourish best on a rather stiff, moist soil, in somewhat sheltered locations. We have often seen trees or bushes loaded with fruit, growing beside brooks or around small ponds. It has long been a favorite fruit for preserving in sugar, and for marmalade, on account of its texture and peculiar and agreeable flavor. We know of no reason why the cultivation of this fruit should be neglected ; for there is always ready sale for it. The plants are easily grown from cuttings, and soon come into a bearing state. They may be planted six feet apart in the row, with rows ten feet apart. The trees are quite long-lived, and usually healthy and hardy. The worst enemy to the quince is the borer, which soon destroys the tree if allowed to work. The same plan may be adopted for the destruction of the borers in the quince as in the apple. Fruit-growers having a soil suitable for this fruit should certainly devote time and space to its cultivation ; for, at the prices for which it has been selling, no fruit will pay a better profit.

VALENCIA CLUSTER.

THIS variety has been before the public several years, and although quite a favorite with many cultivators, particularly at the West, cannot be recommended for general cultivation for market-purposes where *earliness* is an object. The fruit is large, color red, comparatively smooth, growing in large clusters; flesh firm and solid; flavor rather acid for cooking-



purposes, but considered by some persons on this account superior to all others for eating raw.

The plant is a strong, vigorous grower, moderately productive, but matures its fruit late in the season. It resembles in form and general appearance the "Maupay," which I consider its *superior* in all respects.

NEWTON, April 21.

C. N. B.

HOME ADORNMENT IN THE WEST.

I HAVE spoken, in the Journal, of prairie-flowers, and how they impressed us in the past, when these vast plains lay in the freshness of Nature. A change has come over the scene. Enlightened husbandry, and its kindred or associate arts, have given the whole picture a new aspect. Horticulture, indeed, reveals itself in some of the beautiful views of the present, but chiefly in the departments of the useful, — the fruits and vegetables : these pay. The ornamental is neglected : indifference here is but too apparent. How much might these prairie-homes be brightened and beautified by a more liberal attention to the cultivation of trees, shrubs, and flowers ! I am to advocate in this paper the cultivation of these, or rather that portion of our native flora which we have at hand.

Plant deciduous trees very early in the spring ; plant trees every spring ; plant both the useful and ornamental, till the homestead shall be sheltered from wintry winds, and the inmates have easy access to cool and grateful shades in summer.

Nature adapts her arborescent growths to mountain, hill, and plain. She has given to these prairies the beautiful burr-oaks. We see them standing out in solitary forms, or scattered in far-stretching, irregular lines, but more commonly in park-like groups and masses. Wherever and however seen, they are always objects of pleasing interest. Lucky are they who have groups of these native growths near their farmsteads. Sightly are they in the out-look, very pleasant places for family pastimes, and attractive objects to others in the distance around. Like the other oaks and the hickories, they are difficult to transplant. They can, however, be successfully removed with a ball of frozen earth ; but the better way is to take them from the nursery, where, by repeated transplanting when quite young, they form the needful roots for safe and easy removal afterwards. Very graceful trees for the roadside and the lawn are the elms, with their wide-spreading tops and drooping branches. In fine contrast with these are the dense, rounded, massive forms of the maples. Good shade-trees also are the hackberry, the white-ash, butternut, and black-walnut ; and in some

situations, for shade or ornament, the basswood, honey-locust, willow, and tulip-tree are effective.

In this connection I may mention another tree, — the Lombardy poplar, which, though not a native, has been introduced and extensively planted in some sections. Whatever may be said of it in other respects, it is certainly striking and effective seen in the distance on the prairie, whether singly or in clusters, about the farmstead or near the villa. It is giving a new and novel aspect to these landscapes. The people like it, and will have it, because it propagates easily, grows rapidly, and assumes a form towering and spiry, which seems to take their fancy.

We may choose from the lesser growths, for ornamental purposes, the hop-tree, the early-flowering red-bud, the beautiful virgilia, the curious fringe-tree of snowy whiteness, the sassafras, sumac, amelanchie, pawpaw, viburnums, cornels, Missouri currant, and the queer little tree-shrub wicopy, of yellow bloom and April cheer.

We can make a fair show of climbers by taking our native wistaria, Virginia creeper, trumpet creeper, bitter-sweet, clematis, and the honey-suckles : these all take kindly to culture, and are rampant growers. The trumpet creeper, rich in foliage and gorgeous in its clustered blossoms, will give us the added pleasure of the humming-bird. These fairy visitants from the tropics are peculiarly attracted by the large trumpet-shaped flowers, in and around which, between honeyed repast and sunny pastime, they seem to hum their little ecstasies all the summer through.

The evergreens were not needed on these sunny plains till man's cultured wants and tastes demanded them : so Nature left them out. But we must have them now : indeed, we cannot afford to do without them. They are as useful as ornamental ; breaking the force of the winds in bleak exposures, and serving admirably for screens and hedges in the nearer home-grounds. They are delightfully effective when seen in winter : more especially do they delight us, when, in appropriate situations, they display tastefully-arranged groups. Luckily they can be easily procured from our northern borders, or, better still, from nurseries near home. They take kindly to cultural treatment ; and most of them — our native kinds — grow rapidly with dense and symmetrical forms, pushing their boughs regularly from the ground to the foot of the topmost leader. I look from my room

when all else seems desolate without, and am cheered by these bright and living masses of green ; and I rejoice to contemplate the beneficent mission of the evergreens soon to become extensively prevalent on these prairies. You will get them, reader, in the spring, if they are not already giving beauty and cheer to your home ; these at least,—the pine, fir, spruce, hemlock, arborvitæ, and juniper. And do not forget the airy larch and the graceful canoe-birch : though nude in winter, the latter pleases at all times ; while the former is indispensable in summer for beauties all its own.

In works of Creative Goodness, beauty is the attractive quality. “ He maketh every thing beautiful in his time.” So he gives us the FLOWERS. They greet us everywhere, and we take them to our homes for the cheer they give us.

There are rich stores of them on these prairies. Let us secure in garden culture the choicest of these, before the ruthless plough, and tramp of the cattle, shall have quite laid them waste. We prairie-dwellers should feel special interest in the outgrowths of the prairies. We ought to preserve and cherish these flowers, not only because they delight us now, and will minister to æsthetic pleasures in times to come, but because to us, pioneers of a new domain, they are bright memorials of the past. Exotics of less decorative value, and not so well adapted to our soil and climate, are eagerly sought and fondly fostered. We welcome these foreigners : shall we not appreciate our native-born ? Some time-honored plants there are which we prize, and must have for their intrinsic worth or clinging associations. Be it so. We will not omit the petted bloomers of old-time memories : there is room for them and for these.

Any intelligent observer, while engaged in the process of carefully removing plants, will often be struck with the curious methods by which Nature fixes and secures her delicate pets. Some are found in peaty loam, deep down beneath a covering of vegetable mould, as the bulbs of the wild hyacinth : there they securely mature, and then push up, about mid-May, their slightly spikes of pale, pearly blue, which, maturing seed, are soon after lost from view amid coarser herbage : this, in turn, decays, and gives them a new coat of mulching.

Some nestle among or beneath the roots of hazels and other stronger growths : these push forth their delicate leaves and blossoms, and accom-

plish their beautiful mission, before the others wake from their long repose to give hinderance : such are the trilliums, the dentarias, spring-beauties, and the lovely spring-lilies. It is amusing to trace these last in some half-sunny, half-shady interval, down through the rich mould to the little bulb-lets which are double-stemmed ; one coming to the surface with its spotted leaves and lily-bearing scape, the other branching off at a right angle to form another bulb and a new plant. And this is the secret of the rapid spread of these exceedingly pretty patches of mottled leaves and snow-white blossoms, so lush and luxuriant in the April days. It will tax all our skill to reproduce their plentiful bloom in the garden.

Others are shallow-planted, under leaf-mould, but have a thick, annual mulch of leaves ; as the blood-root, bell-worts, twin-leaf, jewel-wort, and wild-ginger. Uncover the last very early in the spring, and you will be startled by what will seem a nest of little snakes, so vermicular and interlaced is its large mass of singular rootlets, every one of which has a black head and silver-gray throat already swollen to bursting by the vernal forces. These all take kindly to the garden in the shady borders, where a few half-decayed leaves in warm weather, and new-fallen ones in cold, will keep them, as many other of these tender plants, in thriving growth and successive blooming. That little germ, jewel-wort, quaintly called Dutchman's-breeches, is found a little deeper in the rich soil, and its frail little bulblets require nicer care in placing them in the garden ; yet if some of the fine light mould in which they delight is taken with them, they never fail : in fact, they improve by cultivation ; and, though less showy than its stout cousin from China, it is far more delicately beautiful. Indeed, few objects in the garden are more charmingly attractive than a symmetrical clump of this perfection of leaf-spray and jewel-blossoms.

Others, again, are protected by a thin covering of turf, or deeper beneath the interlaced roots of stout grass and herbs, like the lady's-slipper. One might suppose, that, in such positions, they would be smothered or overmastered ; but they have strong roots, and push strongly and early, and thus have ample time to develop leaf and flower before these others have made much growth. This other rank vegetation, which springs up near midsummer, serves the double purpose of keeping the germs of these most

singular and desirable plants secure from the extreme heat and cold, as well as from other accidental harm.

All this is important to be known, that, when transplanted to the garden, these tender growths may find something analogous in the appliances of their new fixtures, where they are expected to thrive and bloom as before.

Equally important is a careful attention to the conditions of soil and exposure ; for we must prepare and adapt our beds and borders accordingly. We need not suppose, however, that they must be in every respect like the native habitats of our wildings. Most of them will conform themselves readily to modified conditions. The prairie-soil of our gardens is already suitable for most of them ; and, for the rest, we can easily procure the required peat, leaf-mould, and sand. We shall be puzzled most, perhaps, to give some of them the desired shade and moisture. For some, the sub-shelter of trees and shrubs will be sufficient. A good place for the lady's-slipper is the north side of the dwelling or other buildings. They do not usually grow in such wet places as many suppose. The large yellow thrives in dry, and the others in moderately moist ground. They are found in all the freshness and unique beauty of their leaves and flowers, starting suddenly from the thin, sometimes matted turf, along the edge of the sloughs (sloos) or rims of sphagnum basins, always above the water-level ; sometimes, indeed, in bogs and swamps ; yet, even here, in spots elevated somewhat above the common level, and on the top of hummocks. The showy lady's-slipper, which is supposed to be most difficult of culture, I have grown for years in good garden-soil mixed with peat, on the north side of a small building, where it thrives, and blooms freely.

These plants, all the wildings, may be removed when at rest in early spring or late autumn, or, if more convenient, during any stage of their growth, with ease and success ; but, if transplanted in the flowering-time, they must be carefully taken up with some of the turf and earth adhering about the roots, kept covered till planted, and then shaded from the sun till well established. Plentiful watering, at the time of covering the roots and afterwards, may be needful.

It will not be necessary to designate the plants most suitable for decorative effect in the home-grounds : they have been already described in this Journal. Any one can choose from the host of prairie bloomers such as

suit his taste and fancy. Most of them are perennials, and, when once established in the garden, will require but little labor to keep them in thriving condition.

A few annuals or semi-biennials, such as *Collinsia verna* and the scarlet painted-cup, require somewhat different treatment. Beds for these should be in portions of the grounds not likely to be disturbed by hoe or spade. Here they will bloom and ripen, and sow their seeds, without our meddling, year after year, thickening and spreading their flowering masses; only requiring the weeds and grass to be kept out, and the surface lightly stirred about midsummer. The young plants will appear in September, and get sufficient strength to winter safely. The *Collinsia* feels the first impulses of spring, and becomes a thick show of pretty blossoms about the time of the crocus and hepatica, following them closely.

I hope something may have been said in this brief article to awaken some interest in the cultivation of our native plants, — these old-time heritors of glebe and wold, — which only wait our call to embellish many bare and unsightly places, where people stay, but do not really live.

And now, lady-reader, will not you stir up husband or brother or some one to the heavier task of the trees and shrubs, and also to lend a helping hand to you in the lighter labor of the flowers? As spring opens, and the season advances, you will take basket, trowel, and light spade, and go forth collecting successively the flowers, and placing in your grounds whatever of these floral gifts may contribute to the enjoyment and attractiveness of home.

Burgess Truesdell.

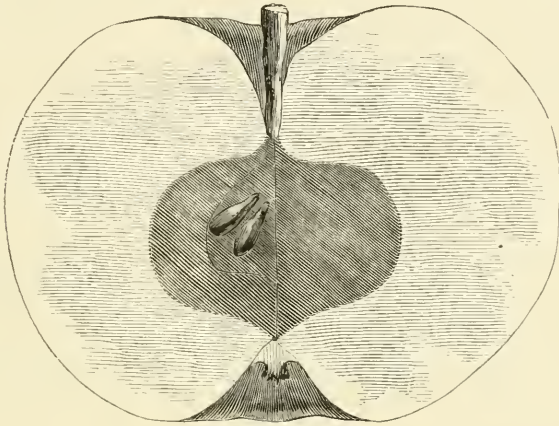
ELGIN, ILL., Dec. 2, 1867.

C A U L I F L O W E R S.

WE hope all our readers who are fond of this most excellent vegetable (and those who are not should be) will make arrangements to grow it for home-use at least, and so plant as to have successive crops from early to late. For early, they should be started in hot-beds, and set out as soon as the ground is in prime condition, and treated very much as cabbages are treated. Those for later use may be sown or planted in the hills where they are to grow. Procure the best of seed, if you would raise good heads.

NEW APPLE.

WOODLAND APPLE. — This is one of the Southern fruits introduced into Illinois by Dr. Crain of Pulaski County. Fruit full medium size, flat, regular ; surface smooth, yellowish-green, somewhat striped with red ; dots



minute, rare ; basin deep, abrupt, regular ; eye small, closed ; cavity deep, lipped, brown ; stem medium to long ; core medium, wide, regular, closed, not clasping the eye ; seeds numerous, pointed, dark ; flesh yellow, rather tough, but juicy ; flavor sub-acid, rich ; quality good ; season, midwinter ; a promising variety.

THE CULTIVATION OF FRUITS IN CITY GARDENS.

MANY years ago, it was the custom or fashion of the residents of this city (New York) to grow grape-vines, peach, plum, nectarine, apricot, or fig trees, and also gooseberries and strawberries, in the small yards or gardens attached to their houses ; the cultivation of which was a source of great pleasure to the proprietors, especially as it was attended with great and gratifying success, enabling them to obtain fruit of superior quality at far less cost than it could be obtained in the markets.

To show what has been done, and therefore what can be done, in cultivating fruits in city gardens, I propose to give some extracts from the Minutes of the Inspecting Committee of the New-York Horticultural Society (now in my possession) from forty to forty-five years ago :—

1822, *June 4.* — One quart of “Carolina Chili” strawberries were exhibited, which were remarkably fine : some of them measured $3\frac{5}{8}$ inches in circumference. (A note appended to the minutes states that they were raised from seeds of the Chili Strawberry, crossed by some other variety.)

June 25. — Gooseberries were presented by different parties, the best six weighing over $2\frac{1}{2}$ ounces avoirdupois : the best one is noted as weighing $\frac{1}{2}$ an ounce.

Aug. 6. — Ten Bolmar (Washington) plums, each measuring $6\frac{1}{2}$ inches in circumference.

1823. — The records show exhibitions of strawberries, commencing May 27 ; raspberries and gooseberries, July 1.

Aug. 26. — A number of fine peaches, and also a fine bunch of grapes, were presented.

Sept. 2. — Several gentlemen presented peaches ; and one gentleman presented four bunches of the Muscadine Grape, one bunch weighing $12\frac{1}{2}$ ounces.

Sept. 9. — One gentleman presented three sorts of grapes : other gentlemen exhibited grapes and peaches.

Sept. 16. — Peaches were exhibited, two of which weighed $15\frac{3}{4}$ ounces ; also three bunches of grapes, which weighed respectively $16\frac{1}{2}$, $17\frac{1}{2}$, and 25 ounces.

Sept. 23. — A peach weighing $12\frac{1}{2}$ ounces was presented ; and the remark is made, that the tree had between fifty and sixty of nearly the same size this season. At this meeting, several bunches of the Isabella Grape were exhibited. This is the first instance, I believe, of their being shown at a society meeting.

Oct. 7. — A bunch of grapes was exhibited raised from seeds of grapes imported from Malaga in 1819. It is noted as being very compact and solid, and a very fine bunch.

1825, *June 7*. — Twelve strawberries were presented, the aggregate measurement being $38\frac{1}{2}$ inches.

June 28. — Gooseberries were presented by different persons, the best twelve weighing $4\frac{5}{8}$ ounces.

Aug. 7. — Peaches were exhibited.

Aug. 15. — Six bunches of Black Sweet-water grapes, and peaches, were presented.

Aug. 23. — Peaches were again presented.

Aug. 29. — A gentleman presented one bunch each of St. Peter's, White Sweet-water, Frontignac, Black Prince, Black Muscat of Lunel, White Muscadine, White Constantia, Black Hamburg, and *Isabella* grapes. Another gentleman presented eight bunches of White Sweet-water grapes, one bunch weighing 13 ounces. A third gentleman presented twelve bunches of the same variety, the largest bunch weighing $15\frac{1}{2}$ ounces. Fine well-ripened nectarines were also presented. At the other meetings in this month, peaches, grapes, and figs were exhibited.

1826. — Passing over such fruits as were presented which were not more noteworthy than those presented in previous years, I find, that, on

July 11, A dozen fine apricots in two sorts were presented. At the anniversary dinner, *Aug. 29*, two gentlemen each presented twenty-five bunches of grapes, and another presented nectarines, and another peaches.

Sept. 5. — Twelve peaches were presented weighing 5 pounds. Other gentlemen presented nectarines which were noted as very fine. At the other meetings in this month, six nectarines, weighing 4 ounces each, were presented by two different gentlemen; and Black Hamburg and other grapes from other gentlemen, noted as very fine.

1827, *July 3*. — A gentleman presented twelve gooseberries weighing over 5 ounces. The show of grapes was but small this year, in consequence of injury done to the vines by frost on the night of June 23. The usual presentations of peaches, plums, and nectarines, were made.

1828, *July 8*. — Apricots (Moorpark) were presented "quite ripe."

Aug. 5. — Four bunches of Muscatel grapes, "nearly ripe," were presented. At the anniversary meeting, *Aug. 26*, several gentlemen presented peaches, nectarines, and grapes. During the September meetings, grapes were exhibited; and, at the meeting of *Sept. 30*, notice is made of "a remarkably fine bunch of grapes which was raised by Mr. P. W. Engs (at his garden in Grand Street) from the seed of the Malaga Grape. The vine was five years old, and the sample of fruit the first that was produced. The grape was remarkably firm and well flavored; and the bunch, although not large, contained very perfect and well-ripened fruit."

Oct. 7. — Three remarkably fine bunches of Black Hamburg grapes were presented: one bunch weighed $14\frac{1}{2}$ ounces, another weighed 37 ounces!

Oct. 14. — A Heath Cling Peach was presented perfectly ripe, measuring $10\frac{1}{2}$ inches in circumference, and weighing 9 ounces. Red Madeira and other grapes were also presented.

I could go on and make many other extracts to show what has been done in the way of city-fruit gardening, but presume the above will suffice to show what can be accomplished in that way. All the articles noted as above were grown in city gardens, and without the aid of glass or artificial structures.

It will be observed that the grapes exhibited, with two exceptions, were all foreign varieties, which do admirably in such situations ; the solar heat absorbed by the surrounding walls and pavements during the day, and again given out at night, so tempering the atmosphere as to prevent those sudden thermometrical changes which give birth and such destructive activity to the mildew, the great enemy with which we have to contend in grape-culture. To this we may also add the shelter afforded by the buildings against the cold winds so frequent in our spring season, preserving peaches, nectarines, and apricots from curl in the leaf, and other injurious effects produced by sudden checks when in a tender, growing state. Besides this, the curculio is seldom seen in cities.

Having shown that it is feasible to grow fruit in city gardens, I would urge upon persons having properly exposed situations in our large cities to make the endeavor ; knowing well, both from experience and observation, that they will be amply rewarded for their labor. The situation should be such as to have at least three or four hours' sunshine during the day, although plums do not require even as much as this ; and, where the natural surface has been taken away in making excavations for the buildings, an artificial border of fresh soil from the country should be made, from four to six feet wide and about two feet or thirty inches deep, mixing, say, one-fifth or one-sixth of common stable-manure with it, or a barrel of coarse bone-dust to every ten or twelve cubic yards of soil. I have seen vines do well in the coarse, sandy *débris* of buildings full of brick-bats and lime ; but these were exceptional cases.

Peaches, nectarines, plums, apricots, and figs may be grown as standards ; but it is better to train them on the fences or walls. The free use of the syringe or garden-hose where water is introduced into the house will guard against the red spider, the only insect likely to give any amount of trouble. The pruning and training can be according to the taste or fancy of the proprietor : only, for grapes, the Thomery system permits of a greater number

of sorts being grown. Of course, in cities as far north as Albany or Boston, grape-vines and fig-trees would require strawing or other protection during the winter.

The best grapes for this purpose are White Sweet-water, Golden Chasselas, Austrian Muscat, Black Prince, and Black Hamburg.

The best peaches are Hale's Early, Grosse Mignonne, Oldmixon Freestone, Noblesse, George the Fourth, and Crawford's Melécoton.

The best nectarine is the Early Violet. The best apricot is the Moorpark. The best plums are the Imperial Gage and the Washington. The best figs are the Brunswick and the White Ischia.

The culture of these is similar in all respects to that of the open garden; but attention should be paid to giving the trees every spring, before the buds begin to swell, a thorough washing with a brush and soap and water, to cleanse them from the soot and dirt which adheres to them.

In quoting above so largely from the Minutes of the Inspecting Committee of the New-York Horticultural Society, I do not wish to be understood as relying solely on the testimony they afford. My father used to grow foreign grape-vines in pots for sale for city gardening long before there was much demand for them for vinery-purposes: and I have often been called upon, when a young lad, to prune the vines and trees of our customers, and to superintend the making-up of the borders previous to planting; so that I can speak from personal experience and observation. *James Hogg.*

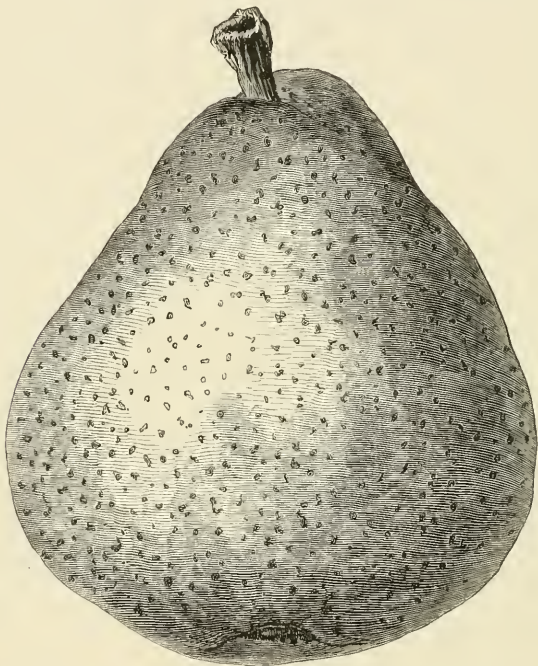
NEW YORK, April, 1863.

CAEN DE FRANCE PEAR.

THIS variety, although received from Dr. Van Mons more than thirty years since, is but little known in this country. It then came to us as No. 51, under which number it fruited in the collection of the late Robert Manning of Salem. It has borne for many years with Messrs. Hovey & Co. and myself, and may be classed as one of the best very late pears in cultivation.

Size above medium; form obovate, inclining to obtuse pyriform, rather

broad across the middle ; stem rather stout, short, about three-fourths of an inch long, planted without depression ; calyx small, set almost on the apex of the fruit, with scarcely any basin ; segments generally abortive ; skin thick, rough, dull greenish-yellow, coarsely stippled, and covered almost entirely with russet, which becomes at maturity of a cinnamon color ; flesh yellow-



ish-white, half melting, juicy, buttery ; flavor vinous, sprightly, rich, nutty, or melon-like, with a little astringency. Season December, but is easily kept to February. Quality "very good," excellent.

The tree is hardy, sufficiently productive, and comes naturally into a pyramidal form with a head and habit of the Urbaniste.

Marshall P. Wilder.

THE PEAR DUCHESSE D'ANGOULÊME.

WE frequently hear complaints about the stunted growth and unproductive habits of this variety, which, although truthful in some respects perhaps, we should say, judging from the scrubby-looking specimens often seen in village-yards, is the result of a poorly-selected tree at first, or of a misunderstanding of its subsequent requirements.

To be successful with the Duchesse, it should come from the nursery in a healthy, thrifty condition. It should have a good soil, and, if possible, a location protected from harsh winds. Its vigor should be maintained by annual dressings of good stable-manure, especially if on quince-roots; and the trunk and lower branches should be kept smooth, and free from moss and the *coccus* (scale insect) by washes of soap-suds, or mild dilutions of whale-oil soap and water applied with a stiff brush.

The importance of selecting trees that have a good previous season's growth is not always considered: in the case of the Duchesse, experienced cultivators often regard it as a primary step towards success.

If possible, then, this matter of selection should be seen to, either personally or by some experienced friend, rather than to purchase at random or by order; then, with the simple routine attentions alluded to, a satisfactory growth will be likely to follow.

About the productiveness of the Duchesse there is much interesting evidence, showing that even unproductive trees have been made fruitful by certain manipulations not laid down in the books. One or two illustrations here will suffice.

A had a Duchesse tree, measuring, say, twelve inches in circumference above the ground. It blossomed full every year, but produced no fruit. He resolves to change the variety; and accordingly cuts off the top, putting in grafts of other popular sorts. From that time, the tree annually produced a good crop of this noble fruit.

B has a similar experience. His trees were literally covered with white blossoms every season; but hardly a leaf appeared, so dense was the floral display: even the terminal-buds were crowned with blooms. It was so in years previous; but the prospective product all dropped, covering the ground with embryo fruit.

A friend suggests the removal of all outward blossoms, and a general thinning of those that remain. For the first time in many years of equal promise, the fruit set ; and in the autumn a fair crop was gathered, including specimens of nearly a pound weight.

From these statements, we may reasonably suppose that an over-abundant bloom absorbs and checks the flow of sap, which would otherwise be directed to the formation of leaf and wood growth ; and, as all fruit production is greatly dependent upon a healthy action of the leaves, it is not improbable that some of the disappointments experienced with the Duchesse may emanate from this cause.

George Lincoln.

HINGHAM, MASS.

FORCING STRAWBERRIES.

(Continued.)

IT is the impression of some, that the long, dormant period of winter is, to a considerable degree, waste time in the vegetable kingdom, yet to be endured on the principle that we allow time to a setting-hen, — because a hen's time is not of prime importance. It is said that when a plant is frozen solid, root and branch, it is in a state of perfect inactivity ; and therefore it is immaterial to the plant whether it remain in this condition a day, or a month, or three months. Yet it can never be strictly true that a plant is perfectly inactive : some processes of hardening and strengthening are still going on when the plant is seemingly at rest. If we attempt to shorten this period of rest beyond a limit, we shall find the plant will itself speak in dissent from our wise theories. But, though we cannot disregard the law of rest and the element of time, we can, to a considerable degree, hasten the one (if we may so speak), and shorten the other. In the strawberry we want the plump, matured, hardened crown, which is gained by slight freezing and quiet rest through the month of December. If the pots are packed with leaves in a cold frame, and also slightly covered with leaves, a moderate and steady degree of cold may be obtained. The first lot for forcing may be brought in about the first of January, and earlier if absolutely re-

quired, adding a succession-crop as often as may seem desirable. The conditions for success are few and simple. A gradual start may be obtained in any spare corner or cool part of the house, as under a stage or table, if free from drip. Water moderately until the roots and tops become active. As soon as the crowns begin to develop, the plants should be placed near to the glass, and have the three great requisites, — *light, air, and heat*. Water freely, using guano in solution, when the berries begin to swell. In order to induce luxuriance of growth, and keep the red spider in check, syringe the foliage as soon as the sun strikes in the morning, and again upon early closing in the afternoon. This process is to be omitted, to a degree, when the plants are in bloom. Fumigation with tobacco may become necessary in order to destroy aphids. We scarcely need speak of the breaking-off of runners; and indeed the whole winter treatment is so simple and natural, that any close observer might “venture to go it alone.”

Yet the conditions, though simple, are absolute. With *light, air, heat*, and a regular and plentiful supply of moisture, the result is certain and splendid, equal to the most prodigious crops in June; often yielding an income of a dollar per plant, and, in exceptional cases, of double this amount. But light and heat are not spontaneous in the bleak days of January. They are not to be found in a cold frame: they cannot be secured in a house facing north or west, and scarcely in one facing east. Even if facing south, under a very flat roof, the sun's rays are so greatly diminished, that no successful work can be done until the sun rides high in March. We have as clear sunlight throughout the winter as any country, much more so than England; and yet we need to economize this influence to the utmost during the short, cold days of winter. It is a well-known rule, that, as the angle of the sun's rays upon a glass roof become more acute, the deflection rapidly increases: consequently, the attempt to early force a crop of strawberries under an ordinary frame-roof heated by pipes would be hopeless. In order to secure a sufficient amount of sunlight and heat, a moderately sharp roof seems to be essential. In order to free and abundant ventilation, narrow houses are most desirable. A due south aspect is, of course, most favorable for protection from cold, and for the sun's influence. We may, then, conclude that a lean-to house eleven feet wide, with a pitch of at least one foot in three, and looking south, would be most

suitable for strawberry-forcing. If the house were divided by a walk in the centre, with a front table three and a half feet wide and a back stage of four and a half feet, the plants would all be brought sufficiently near to the glass, and good results might be expected. Another method of construction has been suggested which has decided advantages. It is this: To increase the pitch of the roof to about forty-five degrees, and then devote the *entire space* of the house to a steep stage; each step being sufficiently wide for a row of plants, and rising so much, that the plants may be inspected and watered from the walk *in the rear* and *under* the stage. By this plan we have three decided advantages. 1st, The utmost influence of the sun will be felt through the sharp roof; 2d, The position of every plant will be high, light, and airy, extremely favorable for warmth of root; 3d, The whole space of glass will be occupied by plants, with no loss in walk, which is under the stage. The main disadvantage is in the difficulty of management of the upper rows of plants, which are not easily accessible. They may be watered by means of a curved pipe connected with a force-pump, or they may be reached from the outside through the ventilators. The advantages of this construction are manifest; so, also, is the disadvantage. Position and circumstances will determine which is most desirable. Oftentimes the fair appearance and the ease in management of a house are more important than the greatest economy of room and the largest possible results.

W. C. Strong.



To the Editor of "The American Journal of Horticulture and Florist's Companion."

Sir, — It has occurred to me that the description of a large English country-house and estate might be, as a subject for a letter, as interesting to you as any that I could select. The difficulty is, that, in consequence of my limited knowledge and hasty examinations, I probably may fail to present the subject in a manner that will enable you to form any very accurate idea of it. I should prefer, if I could, to select for description one that should be an average of the estates of the gentry, scattered everywhere throughout England; not one of the most magnificent or of the most ordinary. But perhaps, after all, the selection is a matter not very important: for all these estates have a general resemblance one with another, making, of course, allowance for a difference of situation, and somewhat of a difference of individual taste and means; that is, the arrangement of the grounds and laying-out of the gardens appear to be conducted everywhere on the same general principle. For special reasons, I have been induced to take for the subject of my description the estate of Coombe Abbey, the seat of the Earl of Craven; not because it is one of the most magnificent or most celebrated places, but because I had an opportunity to examine it somewhat more leisurely than I did others, under the guidance of its manager or gardener, a very intelligent man, ready to reply to any questions that I thought proper to ask; and because, too, it seemed to me, that gardening, properly so called, as we understand that term, appeared to receive here a particular degree of attention. This estate is situated in the central part of the island, in a county celebrated as among the best for its agricultural capabilities. Although the land is high, it is level, and by no means picturesque; yet it has groves and groups of oaks so dotted about over it, that, when viewed from an eminence where an extended

view can be obtained, the country appears to be well wooded, or like a forest. The house of Coombe Abbey stands in a park of about a thousand acres. The site appears to have no particular advantages, or any especial beauty, unless it be that produced by an extensive sheet of water that comes up directly under the windows of the house on one side of it. This sheet of water is supplied by a stream that runs through a ravine on a portion of the estate, and once filled a moat that probably surrounded the abbey, but of which no trace remains. Coombe Abbey was originally a monastery, that, when those institutions were sequestered, was granted to an individual who at that time made such alterations in it as were necessary to fit it for the use of a private family; and from whom, by descent or purchase, it has come into the possession of the present proprietor. It is an extensive pile of buildings, that has undergone so many alterations and additions since it was secularized, that but little remains of the original structure. The house forms three sides of a square, with a court in the centre open to the front. The front of the house is at the bottom of this court; and, from each end, wings project forward, forming the two sides of the court. One of these wings has been entirely renewed; a lofty ornamental stone structure taking the place of the original, of which no part remains, except some Roman arches, that serve as a foundation for the new building. On the opposite side of the court, part of the ancient abbey yet remains, the rooms of which are still occupied by the family when residing there. The cloisters, having their front filled with glass, have been converted into an armory; but to this wing some new rooms have been added. At the bottom of the court, the front still presents some remains of the old abbey; and in the centre of it is the principal entrance. In the rear, a very large addition, containing kitchens, servants' hall, rooms for the steward of the estate, and other offices, has been made to the original building; the whole furnishing every convenience for the use of the family and its numerous suites of attendants. Part of the alterations and additions that the abbey at one time underwent were made under the direction of a man, who, for his supposed skill and taste as an architect and landscape-gardener, was designated in his time as Capability Brown. I am no judge of those arts; but yet I cannot help expressing a doubt whether his work at Coombe Abbey tends to prove the justice of the appellation. The house stands back about half a mile from the road, that passes in front of it; the approach being through an ornamented gateway. The land in front of the house is entirely level, without any ornament, except some fine oaks, some of them planted in groups, and others by the side of the avenue leading to the house. The part of the park appropriated to the pleasure-grounds is, including the gardens, about forty acres. These grounds have been made perfectly level and smooth, and are covered with the soft, smooth turf, always kept closely cut, that can hardly be found out of England or France. Some very fine oaks are scattered about these grounds; and wide gravelled walks lead through them in different directions, entering or terminating in a belt of woods that surround and form a fine background or framework to the gardens and pleasure-grounds; and beds of gay flowers, cut out of the turf, are scattered about in appropriate places. In one part of the grounds was a rose-garden. Here a circular bank, sloping upwards from the level ground, formed a natural amphitheatre.

theatre : in the centre a mound had been formed ; and from this beds radiated towards the circumference, the whole being planted with roses of various kinds. The garden, as that term is commonly understood, was an oblong square piece of ground, naturally slightly sloping, containing four acres, enclosed by a hollow brick wall twelve or fifteen feet high. By erecting a low terrace across the middle of the garden, and lowering the ground on one side of it, and raising it on the other, it had been made perfectly level. There was a wide gravelled walk dividing the garden lengthwise in the centre, crossed by similar ones at right angles ; while other walks parallel with the walls, but at some distance from them, formed borders for fruit-trees and other purposes. In the centre of the garden was a basin of water, in which water-lilies were growing. In one place, a long range of houses for grapes and peaches was built against the garden-wall ; while in others fruit-trees were trained upon it. One of the grape-houses was filled with vines of Muscat varieties ; another with Black Hamburg and Muscat planted alternately. These vines were loaded with fruit : the Black Hamburgs were ripe, and both bunches and berries were of large size, and very fine. In the peach-house, the trees were full of fruit nearly ripe, some entirely so. I was shown some Grosse Mignonne peaches that I thought as large and handsome as any that I had ever seen. Across the garden were two hot-houses filled with plants of various kinds ; and by erecting against the back of each, parallel with the back, and about six feet from it, a glass front of equal height with this back, and covered with a curvilinear roof, additional houses were formed for peaches, trained against the back wall of the greenhouse, and for cherries grown in pots. At right angles with these greenhouses were four other low glass structures, forming pits or stoves for pines and melons, and a house for ferns. Some of the beds into which the garden was divided were planted with currants, raspberries, gooseberries, and like fruit, and others with vegetables ; while round a part of them was a border of dwarf pear-trees. In every respect, the garden and grounds appeared to have been kept in high order ; and, in all the houses, the vigor of the trees, vines, and plants, spoke loudly in praise of the skill with which they had been treated, and of the attention they had received. No doubt there are many places in England more magnificent than this, and I have seen those that I thought more beautiful ; but for the garden alone, merely as a garden, I have met with none that seemed to be better kept, or more desirable. I was told that twenty-five men were constantly employed by the gardener about the garden and grounds, and occasionally seventy-five. Adjoining the garden was a house for the gardener, and a building containing a room for packing fruit, and other offices.

Of the climate of England, I feel that I should be scarcely justified if I ventured to express any decided opinion. My experience, confined to part of a spring and summer and the autumn of two different years, is not sufficient to authorize any very positive conclusion. The general impression is, I believe, unfavorable ; the belief being that there is a great superabundance of rain, and great deficiency of heat and sunshine. This may be so ; but for myself I must say that I found the climate much less uncongenial than I had been led to expect. It is true that in England there is a good deal of dull weather, a good

many days in the year when more or less rain falls ; and an American misses the clear skies and bright sun to which he is accustomed in his own country, sometimes for weeks together. But this is not wholly without its compensation. Many of the rains are but slight, and of no very long duration, — not more than sufficient, in the summer season, to keep the ground well supplied with moisture, and prevent the drougths that in the United States are, very often, so severe and injurious. The average fall of rain in the year is much less in England than in Massachusetts ; and I am inclined to think that there are fewer days in the year in the former than in the latter when labor cannot be performed or exercise taken with comfort in the open air. Ordinarily there is sufficient warmth to bring the crops to maturity. Clear skies and bright suns are not of rare occurrence ; and great heat for days in succession is sometimes felt, as I know from my own experience. It may be that I am best acquainted with the more favored part of the island ; but, so far as I have formed an opinion in relation to it, my conclusions are that the climate of England is not unsuited to health, comfort, or enjoyment.

Joseph S. Cabot.

JAN. 12, 1868.

STRAWBERRIES IN ALABAMA. — In reading the first and second volumes of "The American Journal of Horticulture" attentively, I noted the almost entire absence of communications from this section of country ; and hope it may interest some of your readers to have some notes on the strawberry from Alabama.

I am an amateur cultivator, passionately fond of gardening and raising, and experimenting with strawberries, and find that this berry can be brought to as great perfection here as in the East, or anywhere else, and can be made as profitable.

This winter has been one of the mildest ever experienced here up to this date (Jan. 15), — not one week of cold weather ; and, for the first time in my recollection, strawberries have come to maturity, and ripened in the open air, in December. A cultivator in Mobile County, commencing about 15th December, has, until this time, brought strawberries to market every morning ; as many as thirty-two quarts one morning. The variety was Wilson's Albany ; and the berries were very large and beautiful, and sold for two dollars per quart. I must admit that the berries lacked the true strawberry flavor, and, it seemed to me, were nearly tasteless. These berries had no particular care bestowed upon them. I give this instance to show, that, with a little trouble, berries will ripen in this latitude in December.

My ground I had spaded deep, about thirty inches, and manured with leaf-mould and well-decomposed cow-manure, before planting my strawberry-plants ; cultivating them in hills as a general thing. I clipped off all runners once a fortnight, and have fine bushy plants. The Wilson does well, of course ; although I do not recommend it as a table-berry. This berry, which does well even when abused by poor culture, actually bearing when allowed to be nearly overgrown by grass and weeds, can only be seen in its glory when planted in deep soil, runners kept clipped, and neither grass nor weeds allowed near the

plants ; and then it trebly repays for attention given it. I differ from other cultivators in this section concerning several varieties ; but I imagine the difference lies in the mode of cultivation rather than in the variety. Of the several kinds I have raised for three years, I place, first,

Russell's Prolific, for size, flavor, and number of berries. The one objection is, that the fruit is not borne up from the ground ; but a good mulching of pine-straw remedies that defect in part. I have plants now with forty green berries on them of large size, beside many blossoms (Jan. 15).

Triomphe de Gand is an excellent berry, large, and of a singular flavor that I like. It does not bear as well as the Russell or the Wilson.

Longworth's Prolific is a strong growing plant, berries large and handsome.

Hovey's Seedling is an exquisite berry ; large, and a most delicious table-fruit. Although other varieties may fail once in a while, *this* never does. The berries are very even, and always of good flavor ; which is much more than can be said of a great many other varieties.

I use *Early Scarlet* as an impregnator.

The *Agriculturist* bore a few large berries and a great many small ones, and the plants were nearly entirely destroyed by the hot weather ; and the *Jucunda* ditto.

The *Green Prolific* is rather late in bearing ; but, although a poor bearer, the berries are of delicious flavor.

The *Lady-Finger* bears its berries from the ground ; but I am not favorably impressed with it.

Of several other varieties, French and Stinger's Seedling, Downer's Prolific, and Golden Queen, I wish to try them a little longer before deciding that they are worthless here.

For general cultivation for market, I am sure that the Wilson will pay best ; while the *Triomphe de Gand* or *Hovey's* would give best satisfaction. Of all varieties, I would choose *the* three best in order named, — Russell's Prolific, *Hovey's* Seedling, *Triomphe de Gand*.

John Hickson.

MOBILE, ALA.

UGHT TO BE *vs.* IS. — Much ink-shed has been caused by a few harmless words of ours about the pronunciation of *g* before *e*, *i*, and *y*, in certain words from the Greek. They were not intended to supplement or contradict the dictionaries. Those who yield implicit obedience to their dictionary need no advice from us outside our line. Words in daily common use are always pronounced according to daily common usage, except by those who take more pains to be odd than it is worth. Those who never sound the *x* in *Bourdeaux* always sound the *s* in *Paris* when talking English. But it is common among ethnologists to make the *c* hard in *Celt*, and professors of surgery sometimes do in *hydrocephalus*. *G* is much less restricted to rules than *c*. The two words *gill* have, one a hard *g*, the other a soft. Those who use a hard *g* in *gymnosperm* may make a soft one in *endogen*. Webster gives no absolute rule for *g* before *e*, *i*, and *y*. Any one to make it soft in words from the Greek (as *ch* is usually in *archbishop*, not *architect*) is more honored in the breach than in the observance. But he who follows his dictionary is safe. We do not commend independence of it. I. F. H.

LILIUM AURATUM. — A correspondent of "The Gardener's Chronicle" writes of a grand specimen of *Lilium auratum* as follows : —

"A few days back, I saw in the collection of Mr. Archibald Turner, Bowbridge, Leicester, a specimen of *Lilium auratum*, which surpasses all preconceived notions of its beauty. This plant was some seven feet in height, and vigorous in proportion ; so strong, that the main stem had assumed what botanists call the fasciated form : that is, the flower-stem had spread out flat some two inches wide ; and upon this were, at the least, forty flowers. If the plant, which is in fine health, but rather drawn, has sufficient strength to perfect the whole of the buds that have shown, some fifty or sixty will be brought to maturity."

Another correspondent, speaking of another in flower, says, —

"I saw this extremely beautiful lily the other day, and may state that there are six stems from one root, the highest upwards of eight feet. The stems bear nineteen, eighteen, sixteen, eight, nine, and four flowers respectively, making in all seventy-four. The flowers are fully expanded, and some of them measure ten inches across."

GENTIANAS. — I have been planting gentians, not without a half-guilty feeling, as if, in so doing, I had robbed them of a part of their beauty ; and yet, in removing them to this little city-lot, I have so respected the individuality of each, and preserved their native associations, that I am sure the next autumn will bring me a full pardon.

In the lowest part of the grounds I have scooped out a circular bed, which I have lined with half-decayed sods from the marshes, upon which I have planted a dozen strong roots of the fringed gentian (*Gentiana crinita*). These I cut in the sods from the wet places where they grow ; and, as the season is an unusually dry one, they are not likely to discover that they are being civilized. I have surrounded them with the closed gentian (*G. Andrewsii*), a very interesting species, which is in flower a long time, and has pure white stripes upon its close-shut petals ; next a few plants of the soapwort gentian (*G. saponaria*), a plant of most dignified habit, and a free bloomer withal ; and for the rim of this earthen saucer I have a close-set row of *gentiana puberula*, my favorite among them all. This is the "prairie gentian," the graceful wand with which summer waves to us her last farewell. The pretty clusters of open intense blue flowers (like some eyes, so blue that they are almost black) are shaded at their base into the russet-purple calyx-leaves, and these, again, into the golden brown of the stem-leaves : you shall find a hundred of them among the withered stems of the earlier plants, and each will be a surprise. The fringed gentian is a blue-eyed country girl, innocent and fresh ; but her garments are ill-fitting and coarse. In this species, the genus of gentians culminates in harmony throughout, and with all its surroundings. It is now in perfection here (Oct. 21), while *G. detonsa* with us rarely outlives September.*

G. puberula can be easily propagated from seed, and would be a treasure in any park or pleasure-ground. The lawn of Belle Colline, near this city (which

* Mr. Burgess Truesdell speaks of this (*G. detonsa*) as the latest species of gentian in the latitude of Elgin, Ill.

the good taste of the owner has left undisturbed by improvements), is carpeted with it. A month ago, the same spot was impurpled with *Polygala sanguinea*, and nodding heads of purple and white prairie clover (*Petalostemon*); and I thought how well these two plants were adapted to ornamental purposes, for bedding and massing in sunny situations. Both are easily cultivated.

My planting done, I have filled my deep saucer with good peat-earth, and I know the gentians will do their best now that I have done mine. But human nature is never satisfied, and I covet most of all that hardy mountaineer which botanists find on the Quitendian Andes. I have a specimen of this (*G. russicola*) from Dr. Shuts's herbarium, which was gathered on Cotopaxi, at an elevation of twelve thousand feet. The flower is as large as our harebells, on a sturdy little stem just tall enough to keep it from touching the ground; and the plants grow in patches just on the borders of eternal snows, a reward for the explorer.

Mr. Ruskin speaks of a traveller, who, visiting the Tyrol in spring, saw a strange mountain in the distance "belted round its breast with a zone of blue." Was it cloud? was it substantial? It did not vanish as they neared it, but expanded into richer breadth and heavenlier glow, until it became a belt of gentians. Is not this a hint for planting, say, in New England? With *Gentiana verna* to brighten our cool May, and the prairie gentian to touch with tenderness our sad November, the circle of the seasons would be complete. *Jeanne C. Carr.*

MADISON, WIS., Oct. 21, 1867.

A PLANT FOR THE MILLION.—We do not mean that it is not suited for the choicest of gardens; for it is, perhaps, next to the hollyhock, the most effective plant known for out-door decoration. We mean the Oriental Poppy, with its cousin the Bracted Poppy. They are perennials, and perfectly hardy. The only cultivation they need is to be planted in a good garden-soil, kept free of weeds, and let alone. They do not need to be taken up and divided more than once in five or six years, and they continue to improve every season during the first four or five years. We have seen the flowers six inches in diameter: they are formed like a hemispherical cup, and vary in color from a brilliant scarlet to an equally brilliant crimson. Planted by a clump of red pæonies, they completely outshine them. Sometimes the bottom of the cup is marked with large blotches of an intense glossy black. When the plant has reached its perfection, it will bear twenty of these dazzling flowers at once; and, seen across the garden, it looks like a bonfire. After it is done blooming, the leaves die away; though a slight growth takes place again in September. If plants cannot be had, you may raise it from seed; and it will commonly begin to bloom in the second year. As the roots are long and fleshy, it requires care in transplanting; but, when once established in a warm and sunny place, it is difficult to kill it.

F. P.

RIVERS'S SUMMER BEURRÉ D'AREMBERG PEAR.—This is said to be a variety ripening between the earliest sorts, as Doyenné d'Été and Bartlett. It is also described as healthy and vigorous in growth; fruit smooth, melting, sugary, juicy, with delicious flavor. Do any of our readers know aught of it? If so, we should be obliged for information.

ACALYPHA TRICOLOR. — Among stove-shrubs, a very interesting addition to our ornamental-leaved plants was made during the last season by the introduc-



tion of *Acalypha tricolor* from New Caledonia. It is a remarkably distinct plant, of shrubby habit, producing large ovate acuminate leaves, which are irregularly mottled and blotched with coppery-red and crimson, or sometimes a

good deal suffused with coppery-red, — a color quite distinct from that of any other plant in cultivation, and which contrasts finely with other ornaments of the hothouse. The plant belongs to the Urticaceous order, and is the *Caturus hispidus* of some botanists. It was obtained by Mr. J. G. Veitch during his visit to the South-sea Islands.

This plant is, as yet, rare ; having been only disseminated during the past year. The chances are that it will, like *Coleus Verschaffeltii*, prove an acquisition for summer-bedding.

SOIL FOR RASPBERRIES. — SORTS. — The Horticultural Society of Lawrence, Kan., has queried, *What is the best soil for raspberry-plantations ?*

With the query comes an answer obtained from Mr. Doolittle, who says, "A light, sandy soil that never had a particle of manure, and was so light that it had never been fully sodded over with grass, was selected, and produced the best results." And further he added, that "he would never manure highly nor subsoil for this crop."

Now, what is to be said ? The question is already answered by one authority. In its native habitat, the Black-cap Raspberry is often found in light and gravelly and stony soils, on hillsides, and even on cliffs. The red raspberry is found in stony places in mountainous regions ; and both these native species are observed to be thrifty, and to bear abundantly in such situations : but they are also found to do still better in heavy and rich soils, on lower and moister grounds.

Under high cultivation, and with heavy manuring, the sands of New Jersey have been made to yield most abundant crops of these fruits ; but on poorly-farmed, and arid, sandy, thin soils, the crops are not found to be remunerative. Therefore our Kansas friends are advised to prepare for the droughts of their region by deep cultivation of their soil, which is rich enough without manure ; they are urged to adopt careful and thorough cultivation of their plantations, and, where convenient, to use heavy mulching, even with coarse manure or corn-stalks, in the future years of their raspberry-patches.

With regard to the soil, the recommendations do not accord with those quoted above ; but a rather heavy and retentive but mellow and sandy loam would be preferred to sand, unless that was so underlaid by a stratum of water that abundant moisture could be brought up by the capillarity of this material.

As to varieties, the following may safely be planted : —

Black-caps. — For abundant yield and long carriage, for sale.

Purple-cane. — For productiveness and richness, for family-use and culinary purposes.

Philadelphia. — For productiveness and market.

American Red. — For abundance, high flavor, and fine color.

Kirtland. — For earliness and abundance ; firm enough for a near market.

Clarke. — Promising for beauty and flavor.

The foreign varieties and their seedlings are all large, handsome, and delicious ; but they are tender, and can only be recommended for amateurs who will give them winter-protection.

* * *

NEW FLOWERS. — "The Floral Magazine" for October and November figures the following plants : —

Double-flowered Pelargonium Prince of Novelties. — This flower is a new result of hybridization, being a double variety in the large-flowered section of the pelargonium ; a result but recently attained in the zonale section.

The upper and lower petals, of unequal outline, are transformed into a flat, circular ray of equal-sized petals, forming a diameter in each flower of about an inch and three-quarters in width, and filled up in the centre with small flower-lobes.

These individual blossoms are produced in trusses of three, six, or nine, according to the vigor of the plant. The general color is brilliant carmine-tinted crimson, bounded with a blush-white margin, each petal being marked at the base with a dark rich crimson blotch, from which netted lines run over the carmine surface.

The habit is free, robust, and branching ; for which reason, to repress too luxuriant growth, the soil should not be very rich.

Spotted Foxglove Beauty of Dorking. — A seedling variety, with large white flowers with purple markings.

Carnations, True Blue and Eccentric. — Two show-flowers ; the former a purple flake, the latter a scarlet bizarre.

Cattleya Brabantia. — A hybrid variety between *C. Aclandia* and *C. Lodigesii*, partaking of the nature of both parents ; but, if the illustration is to be relied upon, of less beauty than either.

Rose Antoine Ducher. — A seedling from Madame Domage, of good shape, and of a vivid red-color suffed with purple.

Pelargoniums Heirloom and Victor. — Two fine new varieties of the large-flowered section ; the former a fine flower, rich, rosy-carmine ground, with a large blotch in the upper petals, and a clear white throat.

The latter a very high-colored flower ; the upper petals an intense, deep maroon, almost black, with a narrow, clear border of deep crimson ; the lower petals bright crimson-pink, with a blotch in each petal, with a bright veining of crimson outside.

THE DOWNING EVER-BEARING MULBERRY. — We have cultivated this fruit for some years, and have been quite pleased with it. We have sown the ground about the tree to grass, which we keep closely cut ; and then let the fruit, when it is fully ripe, drop on the green carpet. If there is no fruit down when wanted, a gentle jar will bring down a shower of it. It very much resembles the blackberry. Children are very fond of it. The tree is a rapid grower ; so much so, that the limbs are liable to be split off. The ends of the very thrifty shoots sometimes winter-kill, but not enough to be objectionable. Plant one or two in your garden.

EARLY STRAWBERRY. — This is a beautiful little red apple, of a pleasant, sprightly, sub-acid flavor. The tree is an upright grower, not a great bearer, and not very valuable for many sections of country.

WINTERING TENDER PLANTS IN COLD PITS AND FRAMES.—In many cases, cold pits and frames are all that can be commanded for wintering tender flower-garden plants. There is sometimes an outhouse, spare room, or bow-window, that can be used as an auxiliary to a pit or frame. With such convenience, indifferent as it may be considered, and really is, it is astonishing how much can be accomplished by judicious management, and earnestness of purpose.

In the construction of cold pits to be used for wintering such things as pelargoniums and verbenas, the principal object to be secured is dryness; because damp is a far greater enemy to such plants, and one more difficult to combat, than frost. On this account, I have an objection to sinking below the ground-level, unless the walls below ground be made perfectly water-tight by cement; and the bottom should be as thoroughly drained as possible. Indeed, it is a good plan either to pave or cement the bottom of the frame or pit to prevent water rising by capillary attraction; in which case there must be holes for the escape of all moisture that may collect inside: and the foundation of the inside should be of open rubble, with a drain to take the water away. Pits sunk a little into the ground, and constructed in this way, are warmer than when raised above the ground-level; but I would rather have all above the level, and construct the walls hollow, enclosing a stratum of air, which is the best non-conductor.

One of the principal points necessary to success in wintering plants without the aid of fire-heat is that of preparing the plants in autumn. I have already recommended for all cases early and the coolest system of propagation; but this is most especially applicable to the case of those who have no better convenience than cold frames or pits to winter their plants in. Early propagation allows of the plants being exposed to the open air, and enables them to become thereby robust; and their growth is thus ripened or solidified, so that they are not so susceptible of injury from either damp or cold. They, of course, become well rooted, which is another requisite to success.

When it becomes necessary to place the plants in the pits in order to be secure from autumn frosts, the lights should be drawn off by day, when the weather is dry: not a drop of water should be allowed on the leaves, and they should be kept dry to the drooping-point. This brings on a state of maturity before winter, calculated to stand a damp, cold, confined atmosphere, and the absence of light, with the least possible injury. In placing the plants in the pit, do not over-crowd them. The pots should be washed clean; and, where the leaves of such as pelargoniums are crowded, thin out some of the largest of them.

Some dry, loose material, such as hay or straw, should be in readiness, as winter approaches, for covering up with in case of severe frost; and some of the same material should be packed round the sides of the pit: but for this avoid any thing likely to heat and prematurely excite the plants by a rise of temperature. When thick coverings over the glass become necessary, the material should, if possible, be perfectly dry, and shaken on as loosely as possible; as, the more loosely it lies, the more air—the best non-conducting medium—it contains. If, over the loose, dry material, some light covering, such as strong

oiled calico, can be thrown, it will prevent cold winds from penetrating, and keep the hay or straw dry.

When it becomes necessary, from severe and continuous frost, to keep the glass covered up for a few weeks at a time, and when, perhaps, the thermometer inside the pit would indicate a few degrees of frost, great caution is necessary in uncovering, and exposing the plants to light and air, when the weather changes suddenly to a thaw. To uncover suddenly, under such circumstances, exposes them to such a sudden re-action as will prove far more destructive than a degree or two of frost. The covering should not be touched till the temperature inside has risen above freezing a few degrees; and then it should not be removed all at once, but by degrees. Plants are living things, possessing all the susceptibilities of the most perfect and delicate organism; and are as subject to injury from sudden and extreme changes of light and heat as is the human frame. Many never think of this, or, if they do, are apt to forget it; and so, as soon as it thaws, off goes the covering, and the plants are injuriously affected even by the sudden flood of light; and, if they have been slightly frozen, they are ruptured by a too sudden thaw, and mould and rottenness follow. Frost should not be allowed to creep in, if possible; but, if it does, it should be allowed to creep out, — not be suddenly expelled.

The great points, therefore, in watering plants, where fire-heat cannot be applied, are, first, to keep the plants dry, and in as complete a state of rest as possible, all the latter part of autumn and winter; secondly, when it becomes necessary to cover up for a length of time from severe frost, the covering material should be dry and loose; thirdly, when thaw takes place, do not uncover at once, but gradually, and not till the thaw is complete.

All winter-watering should be avoided beyond what is necessary to preserve life; and it is much better to have plants at the drooping-point than the least over-wet. This is equally applicable to plants wintered in spare rooms, and, indeed, even in greenhouses, where fire-heat can be used. It is astonishing how little water is sufficient in winter for flower-garden plants, and especially pelargoniums, which are often ruined by late propagation and over-watering in winter. I have frequently had variegated pelargonium cuttings in eight-inch pots on shelves go without water for eight and ten weeks, and look splendidly; although so dry, that some would think they would be starved. — *D. Thomson, in "Gardener."*

ROYAL ASCOT GRAPE. — The productiveness of this grape is extraordinary. After every successive stopping, fresh bunches are developed on the young shoots put forth. The regular crop has for some time been cut: but numerous bunches of a second crop, left to test the fruitfulness of the variety, are now ripening; while there are others with the berries as large as peas; and others, again, from recent stoppings, younger still. So prolific is it, that the young plants just struck from scarcely-ripened buds, are, in almost every case, showing clusters which promise to grow on and perfect themselves during the winter or early spring. It seems impossible to repress the bearing propensities of this grape; and this quality, if maintained, coupled with its size and fine quality, mark it out as a grand acquisition for grape-growers.

GRAPES IN 1867 (No. 2). — SOME OF THE NEWER VARIETIES. *Creveling* (synonymes, *Bloom*, *Catawissa*). — The great merits of this grape for wine seem to have been strangely overlooked ; and yet it is one of the few (provided it succeeds there) of which a good wine can be made at the North. It is a moderate but healthy grower here, which may be planted rather closer than some of our rank growers (six by six feet will give it room enough) ; is productive, and little, if any, subject to disease ; bunch long and loose, shouldered ; berry medium, round, black ; skin thin ; has hardly any pulp, and an abundance of rich, sweet, dark-colored juice. Ripens about a week later than Hartford Prolific, and makes an excellent red wine resembling the choice brands of claret. Specific gravity of must by Æcholle's scale, eighty-eight degrees.

Cunningham (synonyme, *Long*). — Where this grape will ripen well, as it invariably does here, it will prove one of the most profitable. It is a very strong grower, and should be planted at least six by ten feet apart. It belongs to the same southern division of the *Æstivalis* species which includes the *Herbemont*, *Lenoir*, *Baldwin's Lenoir*, *Pauline*, and others. Bunch medium, very compact, often shouldered ; berry small, round, black, with blue bloom ; skin rather tough, but sweet ; without pulp ; spicy. It is a good and uniform bearer, and will, perhaps, make the best white wine we yet have, not excepting the *Delaware*. One of the most healthy, but requires a long season, a warm soil and sunny location, and, *here*, covering in winter. Very valuable for our climate and farther South. Specific gravity of must, a hundred and twelve degrees.

Herbemont (synonymes, *Sumter*, *Warren*, *Warrenton*). — Though this is not a *new* variety, its merits have been so much overlooked, that I will include it here. For our sunny South hillsides and farther South, this is one of the most valuable varieties, as it is an enormous bearer, but little subject to disease, is a delicious table-fruit, and makes one of the choicest wines we have. The vine is a very strong grower, and needs as much space as the foregoing. Bunch large, always shouldered, compact ; berry below medium, black, with blue bloom, round ; skin very thin ; without pulp ; juicy, sweet, spicy, and refreshing ; justly called by Downing "bags of wine." As we grow it *here*, I would rather have it for the table than *Delaware* and the *famous* (or notorious) *Iona*, as it is more refreshing, and (to speak Grant-ish) has a *purer* taste. It will produce about seven hundred gallons to the acre, and the wine sells readily at four dollars per gallon. Specific gravity of must, ninety-six degrees. Requires covering here in winter.

Louisiana. — Belongs to the same class, and promises to be valuable as a wine grape : it also ripens earlier, and is somewhat more hardy. Bunch medium, often shouldered, compact ; berry small, round, black, with blue bloom ; juicy ; without pulp ; spicy, sweet, and rich. Is generally healthy, and moderately productive ; and makes an exquisite white wine, of great body and delicate aroma. Specific gravity of must, a hundred and fourteen degrees.

Rulander (synonyme, *Red Elben*). — This is not the German *Rulander*, but is only called so here, and belongs to the same class, I think, as the foregoing, which the vine and fruit resemble so closely that it is difficult to distinguish. Its juice is of deeper color, however, and the wine not white, but rather brownish-yellow, of great body, but with a decided and strong aroma, resembling the best

of Hungarian wines. A moderate bearer, and a thrifty and healthy grower. Specific gravity of must, a hundred and ten degrees.

In my opinion, it is to this Southern division of the *Æstivalis* species to which we must look for our best and most delicate wines; and, although they may be too tender and too late for the North, they are well suited to the climate here and farther South. Seedlings grown from them may show still greater improvements. We should experiment more with them than with the *Labrusca* species, if we wish to obtain *true wine-grapes*. George Husmann.

HERMANN, Mo., March 9, 1868.

CONCERNING GRAPES AT SANDUSKY AND VICINITY, 1867. — The early summer of 1867 filled us all with high hopes of a marvellous grape-harvest in this region. The previous year, 1866, gave us a meagre crop, but matured for the following year vines of utmost vigor with admirable fruiting-canescences. Fecundation at flowering was perfect; not, as in 1866, prevented in good part by violent rain-storms, which washed away the pollen. The copious showers from the opening of spring to June started the vines into robust growth. A cessation of rain-falls came with the summer months; and we experienced through them and autumn the most remarkable drought ever known along the Lake Shore. This, with the high temperature, severe upon man and beast, and seriously damaging to the ordinary products of the field, was favorable to the grape. The leaves expanded and thickened. The young wood attained majority speedily, and ripened to the tips. The berries reached medium size at midsummer; stood still, apparently, till the latter part of September, and then swelled to unusual size. It must be admitted, however, that in July and August, though all or nearly all the causes usually deemed predisposing to disease—as sharp showers succeeded by hot suns—were absent, still the rot came, and did much damage among the Catawbas. This was especially true upon soils containing a considerable percentage of organic material.

Strange too, in August, the Catawba and Isabella exhibited an appearance of leaf so similar to mildew and its effects, as to be named such by high authorities, as Mr. Saunders of Washington. On Put-in Bay, he attributed this effect to dew; but on the islands there is no dew, and, particularly this very dry season, there had not been the faintest semblance of it. For the two months previous, there had been no rain; neither had there been any such noticeable changes of temperature as sometimes occur even in this delightful climate.

Nevertheless, abundance of leaf-power remained for the needs of the vine; and the loss by rot was balanced, in part, by the extra size finally attained by the fruit. The favoring autumn yielded other compensating results. With sparse showers and continued high temperature, the late grapes gained bountifully in quality as well as size. The tables once blessed with the sugary and aromatic fruit demanded more, and the trade became immense. The shipments began in September, and were not completed till late in December. Heavy orders for wine-grapes also came in from the South, West, and East. At home, too, the wine-merchants purchased heavy supplies; and every owner of a vineyard, nearly, thought it a safe investment to stock his cellar with these promising wines.

It is now established beyond doubt, as Mr. Huntington of Kelly's Island has conclusively shown in a late essay upon "The Climatology of Northern Ohio on the Grape-Crop," that there is pecuniary gain to the producer from allowing grapes to hang on the vines as late as possible, provided the price is regulated by the weight of must. It was found this season that the grapes pressed after the 15th of November had gained fully ten per cent in weight of must over the lots pressed before the 20th of October. The loss in gross weight was considerable, but more than counterbalanced by the increase of price, which the Kelly's-island Wine Company have for the past two years graduated by the quality of must. Thus they assumed this vintage eighty-five degrees as the normal standard; and, for every degree above, a mill was added to the rate per pound, and a like decrease for every degree below, down to a certain limit.

It is intimated above that the rot was chiefly confined to the Catawba; and mildew, or blight of leaf, to that variety and the Isabella. It is true that other varieties with us were quite free from these ills. The Hartford, faithful harbinger of the coming plenty, gave us a hundred-fold; and the berries did not drop from the bunches suffered to remain late on the vines. The Concord showed few defective clusters, and the berries did not crack. The must reached eighty degrees, and the grapes ruled high in the market. The Delaware, fairest among the daughters of Pomona, bore its heavy burden cheerfully. Its fruit carried perfectly to distant market, and yielded the handsomest returns. In some instances, the must weighed a hundred and eleven degrees; and a sample of wine from Messrs. Lungren and Rotent, Put-in Bay, tested in committee at the late grape-meeting at Cleveland, was marked a round hundred by every member. The "Sunshine" of Italy, which Hawthorne celebrates in "The Marble Faun," cannot be more nectarous and divine. The Delaware is said to love a very rich soil; but here our observation teaches us that it does equally well on the clay and loam when well under-drained.

There was no rot among the Rogers's Hybrids; but on Kelly's Island we saw mildew on the leaves and fruit of No. 1, and slight traces upon No. 15. No. 3 was early and pleasant; but the bunches were lean, and not numerous. Nos. 4 and 19 were most promising. Both were productive,—4 the earlier and more showy, 19 superior in quality. Fruit-growers have not awakened to the real value of these two numbers.

The Diana, whose moods no man can number, ripened her clusters evenly; and was intensely sweet, if not palatable to every taste.

Of the hundreds of vines of Iona planted, three and four years since, immediately upon the Bay and Lake Shore in this vicinity, no fruit was to be seen. An exception or two would not disprove the general statement. At Put-in Bay, fifty vines of Ives's Seedling in the third year, on the grounds of Sibley and Homer, perfected a fine crop, which was converted into a wine that pleases everybody, by Mr. Harms, the well-known vintner. The must-scale registered eighty-six degrees in this pressing.

The Norton Virginia increases in favor. With pruning such as recommended in Husmann's "Grapes and Wine," it bears plentifully of juices rich in sugar, spice, and tonic. Missouri proclaims her honors in the production of

this wine ; but we modestly believe that the Lake Shore need not fear to enter the lists. A friend found his must weigh a hundred and four degrees, with a low per cent of acid.

The Ives has been named a rival of the Norton. This is a mistake. While equally hardy, healthful, and productive, possibly, there are marked differences, not in kind or degree, which admit of popularity for each, without involving rivalry. The Norton is a late, the Ives an early, variety. The fruit of the Norton is only adapted for wine. The Ives has as high claim for table as the Concord ; while for marketing it is decidedly superior to it, as it never cracks nor dries, and can be shipped earlier. The Norton wine is deservedly noted, in the words of Mr. Husmann, for its "astringency, great body, fine flavor, and superior medical quality." On the other hand, the Ives yields a wine aptly classed by Col. Wilder between a Burgundy and Claret, of fair body, very pleasant flavor, slightly astringent, and can be made so cheaply as yet to be in fact the very boon of that class pictured in the poet's lines slightly changed, —

" And now and then amid his toil, for fear his strength decline,
He wipes his brow, and quaffs a cup of generous native wine."

We append statistics of our crop, which we gathered at great pains from the most reliable sources, expressly for "The Journal of Horticulture," but used, by special request of our secretary, at the late meeting of the Lake-shore Grape-Growers. It will be seen that the whole number of table-grapes shipped amounted to 1,822,000 pounds. This aggregate would have been increased many hundred tons had there not been at mid-season a sudden failure in supply of boxes. This could not be remedied for some time ; and, meanwhile, they were diverted to the wine-press.

There is a hopeful state of feeling among us with regard to grape-growing. It is demonstrated that thousands of acres devoted to raising grapes will prove largely remunerative. Really, one-half or more of the land here devoted to this culture, and which is shown to have realized two hundred and twenty-seven dollars per acre, would not realize three dollars for any other purpose. Yet it is not to be denied, that, with some of our people, there is a disappointed state of mind, notwithstanding this fine showing. This arises from two causes. One, and the more serious, is the universal disposition here, when the general planting took place, to stock their vineyards with but a single variety, — the Catawba. The other error, which has resulted in serious loss to some, is the practice which has prevailed on the part of merchants, lawyers, and business-men, whose duties demand constant attention in the city, of setting out vineyards without personal supervision. Ignorant and careless hands sowed the seeds of failure at the beginning of the enterprise. And when the proprietors have secured a full-bearing vineyard, as they feel themselves able only to provide muscle, not brains, expenses multiply, neglect wastes much of the harvest, and finally, as the market is not carefully studied, the sales bring in but meagre gains ; or, if wine is the product, inexperience and ill-management beget disaster.

The men who give their whole attention to this business are doing well,

almost without exception; and many have grown rich. So, too, the companies who have entered upon this work with definite aims, with capital and efficient superintendents, are reaping a full reward. Gradually the vineyards are falling into the hands of men who propose to make grape-growing a life-business, and *not a speculation*. Some have resorted to a compromise which promises well. They have let out their vineyards on shares to men known to be capable and industrious. House, horse, and implements are furnished; and the tenant performs all the work, and shares one-third of the income.

Another spirit prevails now with regard to planting. There will be much setting the coming spring, but chiefly of Hartford for early, of Ives and Delaware for table and wine, and of Norton for wine alone.

ESTIMATE OF THE GRAPE-CROP OF SANDUSKY, ISLANDS AND PENINSULA, 1867.

Number of pounds of table-grapes shipped from Sandusky by express . . .	1,360,000
Number of pounds of table-grapes shipped from Sandusky by steamer . . .	12,000
Number of pounds of table-grapes marketed at home . . .	20,000
Number of pounds of table-grapes shipped from the islands to Detroit . . .	250,000
Number of pounds of table-grapes shipped from the islands to Toledo . . .	80,000
Number of pounds of table-grapes shipped from the islands to Cleveland and Buffalo, . . .	100,000

Total number of pounds of table-grapes shipped from the Sandusky region . . . 1,822,000

Number of pounds of wine-grapes shipped by express . . .	10,000
Number of pounds of wine-grapes shipped by C. S. and C. R. R. . . .	174,000
Number of pounds of wine-grapes shipped by C. and T. R. R. . . .	76,000

Total 260,000

Number of gallons of wine pressed at Sandusky	150,000
Number of gallons of wine pressed on the Peninsula and Catawba Island	80,000
Number of gallons of wine pressed at Kelly's Island	105,000
Number of gallons of wine pressed at Bass Islands	65,000
	<u>400,000</u>

Estimating eleven and one-half pounds of grapes for each gallon of wine expressed gives the number of pounds of wine-grapes pressed as above, 4,600,000.

RECAPITULATION.

Total number of pounds of table-grapes shipped	1,822,000
Total number of pounds of wine-grapes shipped	260,000
Total number of pounds of grapes pressed into wine	<u>4,600,000</u>

Grand total crop of 1867, 3,341 tons or pounds 6,682,000

MONEY VALUE.

Cash sales of 1,822,000 pounds of table-grapes at 12½ cents per pound	\$227,750
Cash sales of 260,000 pounds of wine-grapes at 6 cents per pound	15,600
Cash value of 400,000 gallons of wine (wholesale rate) at \$1.25 per gallon	500,000
Cash value of 1,500 gallons of brandy (wholesale rate) at \$5 per gallon	7,500
Total	<u>\$750,850</u>

The yield per acre (average), about two tons.

At an average yield of two tons per acre, 6,682,000 were grown upon 3,341 acres.

At a total cash value of \$750,850, the income per acre is	\$227.00
\$227 is the interest at ten per cent on	\$2,270.00
\$750,850 is the interest at ten per cent on	\$7,500,000

M. H. Lewis.

TACSONIA VAN-VOLXEMI TREATMENT.—This plant should be put to rest in autumn, and kept dry at the root during the winter. About the middle of February, it should be pruned, and may be repotted, removing most of the old soil, and have a less-sized pot. A compost of two-thirds light turfy loam, and one-third leaf-mould, with a free admixture of silver sand, will grow it well, free drainage being provided. The pot should be placed in a gentle hotbed, the soil being kept only just moist until growth fairly commences, when the watering should be more plentiful. When the pot becomes filled with roots, the plants should have a shift into the pot in which it is to bloom, and be again plunged in the hotbed until it recovers from the potting, when it may be gradually withdrawn from the bed. The atmosphere should be moist, and the roots must not suffer from want of water; but a saturated soil is bad. The shoots should be regulated upon the wire frequently, and must not be too much crowded. It cannot have too much light, and free ventilation is essential. It does admirably in a warm greenhouse.

WINTERING SCARLET PELARGONIUMS.—Any time in autumn, before the plants are injured by frost, take up the old plants, shake away all the soil, and place them in an open shed for a few days; then pick off all the foliage, and, after allowing them to lie a few days thinly spread on a dry floor, tie them two or three together according to their size, and hang them up in any dry place where fire is not employed, but from which frost is excluded. A cellar is a very good place. Another very good plan is to take up the plants as described, and when the stems are dried a little, and all the leaves removed, to pack the plants closely together in shallow boxes no deeper than to hold sufficient dry sand to cover the roots. They may be kept over the winter in any cool, dry place from which frost is excluded; but the cooler the better: or pack them close in boxes, using sand or any description of poor light soil for covering the roots, and keep the plants in any part of the greenhouse; all they require being the removal of the old leaves and stems as they decay.

ORCHIDS FOR GREENHOUSE.—Three good orchids for a greenhouse are *Lycaste Skinneri*, *Lælia purpurata*, and *Dendrobium speciosum*. Three cheaper are *Cypripedium venustum*, *Bletia verecunda*, and *Oncidium flexuosum*. Half fill all the pots with broken pots or crocks, and upon that place a mixture of chopped sphagnum or moss, fibrous peat, and pieces of charcoal, in equal parts, adding a little silver sand. Press the compost firmly, and raise it in the form of a cone above the rim of the pot. Place the plant on the top, and cover the roots, but no part of the stems or pseudo-bulbs, with the compost. A suitable temperature for the greenhouse, from November to April, is forty degrees at night from fire-heat, and from forty-five to fifty degrees by day; air being given freely on all favorable occasions. The temperatures will, of course, vary much, and considerably exceed those named during mild weather, and especially on sunny days. The temperatures named are for dull days, and during frosty periods; being the maximum and minimum from fire-heat.

GRAPES ABOUT ROCKS.—The past season was a very peculiar one,—wet and cold; and the grapes in many localities East failed to ripen. While this was generally true, it was rather refreshing to observe at one of our horticultural exhibitions splendid specimens of a well-known variety, apparently fully ripe, which we found, on inquiry, had been grown near a ledge of rocks. Some years ago, we visited a place where we observed similar results from a similar cause. The whole secret of the thing is, that the rocks absorb the heat of the sun by day, and give it off at night; keeping the roots of the vine warm, and the temperature about it more fully equalized. Our attention was once attracted to this same subject by observing that the melon-vines in a hill around which some stones had been placed were much larger, at the end of a few weeks, than those in the hills that had not been so treated. The same principle is observed in cities, where grape-vines are trained in front of brick walls, which absorb the heat by day, and reflect it when most needed by the vine. We propose to test more fully the value of such treatment for the vine by placing stones about the roots of several bearing vines, in different parts of the vineyard where they failed this year to ripen a single grape.

ROSEMARY RUSSET-APPLE.—This esteemed English apple is figured in "The Florist." It is one of the most popular dessert-fruits in England; but its origin is unknown. It first came into notice in 1831, but had been in cultivation many years previously.

"Fruit below medium size, ovate, broadest at the base, and narrowing obtusely towards the apex; a good deal of the shape of a Scarlet Nonpareil. Skin yellow, tinged with green on the shaded side, but flushed with faint red on the side exposed to the sun, and covered with thin pale-brown russet, particularly round the eye and the stalk. Eye small, and generally closed, woody, with erect segments, set in a narrow, round, and puckered basin. Stalk very long, inserted in a round and wide cavity. Flesh yellowish, crisp, tender, very juicy, brisk, and sugary, and charged with a peculiarly rich and highly aromatic flavor.

"A most delicious and valuable dessert-apple, of the very first quality: it is in use from December till February."

GRAFTING.—Dr. Regel describes a new method of grafting as practised by Herr Freundlich, one of the Russian court-gardeners, with remarkable success. Instead of taking the scions from the previous year's wood, with the bud just beginning to swell, the still soft, growing, lateral shoots are selected, when from half to one and a half inches long, and either bark or tongue grafted; care being taken not to draw the ligature too tight, as they swell much more rapidly than hardwood scions. Success, he says, is certain, if care be taken that the sap of the stock is in motion at the time the operation is performed. He recommends this mode as superior to all others, especially for hard-wooded trees, such as oaks and beeches, which are usually difficult to propagate from the old wood. New roses, and other plants which it is desirable to increase as rapidly as possible, may also be advantageously worked in the same manner.

VERBENAS IN POTS. — So many of the lady readers of "The Journal of Horticulture" are not only flower-lovers but flower-cultivators, that I suppose I need make no apology for describing a pretty experiment which may be made with verbenas. If any one takes the trouble to try it next summer, I trust she may be rewarded as was the friend of mine at whose house I saw it in the full flush of success.

This was the process: In the centre of a good-sized flower-pot filled with nicely-prepared earth my friend placed a tolerably tall stick, say eighteen inches high, and at the foot of this planted a very fine root of verbenas, which was just beginning to show a few buds.

Keeping this in a shady place for a week or ten days, it began to grow rapidly. Instead of allowing the sprays to *trail*, as is usual, she trained up every branch by passing strings beneath, and securing them to the stick in the centre. She took the greatest care of this pet-plant, watching and arranging every vagrant runner, and moulding with skilful fingers the whole growth into a rounded and compact shape, and bringing the buds up to the top as much as possible. In a few weeks, the *bush* (for it now had the aspect of a densely-growing bush) was covered with a mass of the most brilliant bloom, overtopping the supporting stick, and hanging down in gay streamers on all sides. The flower-pot stood in front of the piazza, somewhat more elevated than the plants in the flower-beds around. The lady dwelt near a great city, on a road which was a favorite drive in the fine summer-days; and I cannot tell how many ladies, and gentlemen as well, stopped at the gate to inquire what that splendid *new flower* might be.

You may be sure that my friend felt a touch of satisfaction at such times. The color she had chosen was that vivid cherry-scarlet, which one cannot describe, but the blaze of which one sees so far off; and the shades of scarlet seem best suited for this experiment, not only for their flaming brilliancy, but for their profuse blooming.

Mary Lorimer.

THE Early Goodrich Potato, of which favorable mention was made last season, fully sustains its former reputation for earliness, productiveness, and all the qualities which go to make up a first-rate market-potato; to which may be added its ability to withstand disease, so prevalent the past season. While the Sebec was a failure, and even the Jackson suffered severely in almost every direction in this vicinity, the Goodrich escaped without injury, yielding a good crop. We recommend this variety with confidence, having grown it two years.

The Harrison, another of Mr Goodrich's Seedlings, a late or winter variety, is even more productive than the Goodrich; perfectly hardy; not affected by rot in the least; yielding immense crops of smooth, handsome tubers of the finest quality. A great acquisition. Both these varieties in cultivation require ample room (being strong and vigorous in their habit of growth) and generous culture. — *Transactions Massachusetts Horticultural Society*.

WASHINGTONIA GIGANTEA. — Our advice to those about to plant this tree in their grounds is to obtain small plants in pots if possible. It is one of the most difficult of all evergreens to transplant.

PROPAGATING *EUGENIA UGNI*. — *Eugenia ugni* is propagated by cuttings of the half-ripened wood. The points of the young shoots should be taken off, when the wood has become somewhat firm, about three inches from the end of the shoot, or in the condition known to gardeners as half-ripe. The cuttings should be about three inches long, and should be cut across below the lowest leaf with a sharp knife, and have the leaves removed half-way up the cutting. They may then be inserted round the sides of a six-inch pot, half filled with crocks, and then filled to within an inch of the rim with a compost of two-thirds sandy peat, one-third loam, adding and incorporating as much silver sand as will amount to one-fourth of the whole. The pot should be filled to the rim with silver sand, and the cuttings put in up to their remaining leaves. The cutting-pot should be inserted in one of larger size; and the interval between the pots should be filled with small pieces of broken pots to within an inch of the rims of both pots, which should be on the same level; and that inch should then be filled up with silver sand. A gentle watering may then be given, and a bell-glass be placed over the cuttings, so that it may rest on the sand between the rims of the pots. The pots may then be placed in a mild hotbed of from seventy to seventy-five degrees, or in any house where there is a gentle heat. Shade the cuttings from sun, and tilt the bell-glass a little on one side at night. Care should be taken not to over-water; but the sand ought to be kept moist. When the cuttings begin to grow, the bell-glass should be gradually raised, and, by degrees, removed; and the shading must be lessened, and gradually removed, in proportion as the plants or cuttings endure the sun's rays without flagging. When well rooted, the plants should be potted off. It is also propagated by layers. A vigorous shoot, layered in a small pot in spring, will be well rooted by autumn.

POLYMNIA PYRAMIDALIS. — In *Polymnia pyramidalis* ("Revue Hort.," 1867, 211, with fig.) we have what in France is strongly recommended as a plant for the decoration of the summer-garden, along with *ferdinandas*, *verbesinas*, and like plants. It is of arborescent habit, attaining forty feet high or more in its native country, which is New Grenada; in the subalpine districts of which it grows in company with cherries and willows. It is of rapid growth, attaining ten to twelve feet in a season, with a pyramidal head, and large ovate-cordate hairy leaves, which endure well under sunshine, measure about twelve inches broad and sixteen inches long, and are borne on a long decurrent petiole. The flower-heads are numerous, yellow, and arranged in cymes. The plant has been grown in the garden of the Paris Museum, and was raised from seeds obtained from New Grenada by M. Triana.

WINTERING BEGONIAS. — They should be kept in a dry house; and no water should be given beyond a little now and then to prevent them drying up or flagging. A temperature ranging from forty to forty-five degrees is sufficient during winter, as they attain their greatest beauty in summer. When desirable to grow them, they must be kept moist, and in a house with a temperature of from fifty to fifty-five degrees at night, and sixty to sixty-five degrees by day, from fire-heat.

POINSETTIA PULCHERRIMA.— Among the various matters that engage a gardener's attention through the different seasons of the year, that of providing a large and constant supply of plants for conservatory and in-door decoration during the winter months is one that requires a good deal of forethought and labor. There are a great number of plants now-a-days well adapted for this purpose ; and, among them, *Poinsettia pulcherrima* has a strong claim on our attention. Its bright scarlet bracts are very effective ; and they remain perfect for a very considerable time, which is a matter of some consequence.

The floral envelopes of this species are generally largest and finest on young plants with only one stem ; and, as these are generally most useful for in-doors, a number of young plants should be grown every season. These are easily raised from eyes of the previous season's wood, like vines, put in early in April, and plunged in a nice bottom heat. As soon as they are rooted, they should be potted off singly into small pots, using a compost of peat and loam, mixed with plenty of silver sand. When potted, they should be returned to the frame or pit, and again plunged in a nice bottom heat, and kept rather close for a few days, until they begin to grow, when air should, at every favorable opportunity, be abundantly admitted. They should be freely sprinkled overhead with water when they require it ; but care must be taken not to give them too much water at the root, particularly whilst they are plunged. Towards the end of June, or by the early part of July, they will be nice little plants, and will, if they have done well, require a shift into a larger-sized pot about that time. After they are shifted into larger pots, they will do very well in any of the vineries, if not too shaded, until September ; but should be kept near the glass, that they may not be drawn. In September, they should be put into the stove, and should be carefully watered and freely syringed overhead. In due time, they will unfold their brilliant scarlet bracts. They should have every attention paid them whilst in flower. When they begin to go out of flower, water must be gradually withheld from them ; and the plants should be rested in a dry part of the stove.

In the spring, the branches of the previous year should be cut down to within three or four eyes of the old wood. Shake off all the soil from the roots, and repot them into as small pots as possible ; then plunge them in a nice bottom heat. When they have grown a little, and made some fresh roots, shift them into larger pots, and return them to a situation where they may enjoy a supply of bottom heat. They will then grow rapidly, and in the course of a few weeks will again require a large pot. After that, they will do in a vinery, if not too much shaded ; or they may be put into the stove. These large plants will bear several heads of flowers, and are very ornamental and showy ; but the bracts will not be so large as those on young plants that only bear a solitary flower-head.

M. Saul.

CHAMÆCYPARIS OBTUSA.— According to M. Briot, *C. obtusa pygmæa*, when grafted on *C. Boursieri*, yields plants which are free-growing and erect in habit ; while if it be grafted on a *biota* or a *thuja*, or if it be propagated by cuttings, the plants, instead of becoming erect, spread horizontally on the ground.

INDIA-RUBBER PLANT PROPAGATING. — It is increased by cuttings. The points of the shoots should be taken off with a sharp knife; and, if it have two good joints in addition to the growing-point, it will make an excellent cutting. The leaf should be removed from the lowest joint, beneath which the shoot should be cut across with a sharp knife. The cutting is to be inserted in a small pot placed within a larger one. Use a compost of equal parts of sandy peat and loam, and silver sand equal to both. After giving a gentle watering, plunge the pots in a hotbed, and cover the cutting with a bell-glass, keeping it close, but not very moist; otherwise it may damp off. It will not be necessary to cover with a bell-glass if the house be kept close and shaded. A slight shade from bright sun should be afforded. A mild bottom-heat of from seventy-five to eighty degrees is essential. When the cutting begins to grow, remove the glass, and shade by degrees. Spring is the best time to put in cuttings.

CULTIVATION OF FIGS. — The best specimens of this fruit are raised under glass; but good ones can be grown in the open air by proper attention. The tree requires a rich and rather moist soil. It succeeds well on the back wall of a grape-house, and does not seem to be injured by the shade of the vines. Another good way is to put the trees in tubs or boxes, and start them in the house; and when the weather becomes fine, in May or June, set them out, keeping them well watered through the season. They may be grown and ripened in the house in tubs or pots. An occasional watering with manure-water will be beneficial. Another mode that we have followed with success is to set the trees out in spring, as soon as the frosts are over, in a good rich soil, where they will not suffer for moisture, exposed to the sun; and then let them stand until there is danger of frost again in autumn, when they should be taken up and put in a house or other cellar, secure from frosts. This operation is to be repeated yearly, and it will give very pleasing results. The trees will ripen one crop certainly, and, in very favorable seasons, two crops. The brown Turkey fig is a good variety for this purpose.

BLACK WARTS ON PLUM-TREES. — Whenever these appear on the trees, they should be immediately cut off, even though it does leave a considerable wound. The succulent warts afford a breeding-place for the curculio, the active destroyer of the plum. Some recommend the free use of salt; but we do not believe it to be a preventive against the warts. They are caused by a diseased state of the sap. We think, in time, the black wart will entirely disappear. We wish we could say the same of the curculio. While the plum is not one of the very best of our summer fruits, still many persons are quite fond of them, and wish they might be made to flourish as in years gone by.

NEW GLADIOLUS. — The best of the last year are, *Princess Alice*, lilac, lightly tinted with rose; *Norma*, white, sometimes very lightly tinted with lilac; *Uranie*, white, striped with lovely carmine-rose; *Mozart*, lively rose, largely tinted with violet, and flamed with deep carmine; and *Semiramis*, rosy carmine ground, largely flamed with deep carmine.

We publish the following letter from an esteemed correspondent, whose critique is eminently just : —

ALBANY, March 19, 1868.

To the Editor of "The Journal of Horticulture."

Sir, — I have read with much interest the article in your Journal headed "Zonale Geraniums;" but, when I came to the conclusion of it, I was much startled by the remark, "that there is considerable difference of opinion, whether this genus or these genera should be known as geranium or pelargonium; that English gardeners are pretty much divided on that question." Divided on what? I am simply stunned, confounded, at this disclosure, and from such a quarter! "In this country, all the zonale, variegated and others, are known under the head of 'geranium.'" This last appellation is rather more consistent than the British one. If, however, British gardeners do not know any better, that would not reflect much credit on their botanical knowledge. But what crowns all, and upturns all my feeble notions, not of botany, but of common sense, is, that it is only *affectation* to designate a plant by its proper name; that it is only of late years that an attempt has been made to change the name and confuse matters.

Now, I should like to know from your correspondent or correspondents, from any place, when the name of *geranium* has been changed for *pelargonium*, or *vice versâ*. Since some fifty years, I have more or less been in contact with plants, gardeners, affected or unaffected botanists; and I confess, to my shame, that it is the first intimation I have had of such a change, if any change. In my opinion, what has confused matters is not botanical affectation, but the ingenuity of the inventors. I use this paraphrase not to *affect* too much *bluntness* in calling things by their proper names; otherwise I would be more explicit. Your correspondent says, "All the zonale, variegated and scented, are all known under the name of 'geranium;'" but are they geraniums proper for that reason? No: no more here than in England, or anywhere else, where the same confusion exists, and from the same cause.

What! is it affectation to call things by their proper names? Is it affectation to call a pelargonium, pelargonium?

I resume, and insist that there is no affectation in saying that a geranium *proper* is very different from a pelargonium *proper*. Geraniums, as ornamental plants, are very little known, and less cultivated; they are all, or mostly all, herbaceous, perennial, biennial, or annual plants: whereas pelargoniums are nearly all shrubby plants; at least, the kinds we cultivate, such as *P. zonale*, *P. inquinans* (*Ciconium zonale*, *Cor. Ciconium inquinans*, *Andrius*). I abridge my reflections, and remain yours very respectfully.

L. Menard.

THE gardener of Mrs. T. W. Ward of Canton, Mass., has kindly communicated the treatment by which he has so successfully bloomed *Bougainvillea spectabilis*: —

"The following method of cultivation I have found to be very successful: As soon as the plant is done flowering, it should be cut back to within a few joints from where it started the previous year; then taken out of its pot, part of

the old soil shaken from its roots, and replaced in a pot a size smaller than that in which it flowered.

"It is then placed in the warmest part of the greenhouse, and kept shaded for a few days, using the syringe rather freely until it commences to start; after which it ought to have a sunny exposure. It will now grow rapidly, when it is again repotted, giving plenty of water during this time. When it has completed its growth, it is placed in a cooler part of the house, and water gradually withheld, to thoroughly ripen its wood, in which I think depends the main secret of its successful blooming.

"The soil which I use is composed of about equal parts turfy loam and leaf-mould, with sufficient sand to keep the whole open and porous.

"The temperature of the house in winter is kept at from 45° to 50° at night, and in the day with sun-heat at from 70° to 75° .

"The *Bougainvillea* is a native of the table-lands of South Mexico, where it grows in great abundance; but it is said to seldom retain that beautiful mauve color so strikingly effective when grown under glass."

Editors of "The American Journal of Horticulture."

BRISTOL, R.I., March 17, 1868.

Gentlemen,—I read in the March number the article on the propagation of "*Cyanophyllum magnificum*" from the top of the plant. Now, as very few gardeners or amateurs would like to spoil such a noble plant for one cutting, a better way is to cut the plant down within a few inches of the pot, and cut up the cane into eyes, like a grape-vine. Split the joints as the eyes are opposite, and insert the cuttings in a slanting direction, in porous sand, so that the eye will just be covered, while the part above will come level with the surface. Cuttings made in this way will be rooted and ready to pot in two months, with four leaves on each plant.

I have found January the best time to put in the cuttings. Shading can be dispensed with; other directions the same as in your previous article.

Very respectfully,

Robert Hogg.

NEW ROSES.—The list of new roses given in the foreign journals is again numerous. Over one hundred are named by different writers as of great beauty: but they are probably, like some other things, valuable only to the eye of the originator; beautiful, perhaps, but, as a rule, no advance. In examining roses the past season, we find very few of the new ones of superior excellence, and, in making a list of fifty, believe full one-half would be varieties of a dozen or more years old.

F. R. E.

ROSA.—"What has become of the Austrian and Banksian roses, of which so much was said a few years since?"—They are superseded by many of the Noisette class, which are nearly as hardy, and much more abundant, besides being perpetual bloomers. So, also, are most of our old summer or garden roses superseded by the Hybrid Perpetuals and most hardy Bourbons.

IMPROVEMENT OF NATIVE GRAPES. —Whether the native grape is to be improved in the qualities essential to a hardy plant by hybridizing it with the foreign species, is a question that presents itself rather prominently at the present time. The prevailing idea in the minds of those who advocate this process of amelioration is, that the native grape is deficient in sugar, — a want, it is supposed, that may be supplied by the agency of the foreign fruit.

It has appeared to me, from the published analysis of grape-juice, that an excess of acid, rather than a deficiency of sugar, is made apparent. So far as regards the saccharine principle, the native grapes, especially the improved varieties, compare favorably with the foreign. It is also understood that cultivation has a great influence in diminishing the acid: this, we find, is made evident as improved seedlings are brought into notice.

But a far more important preliminary is to secure a perfectly healthy and hardy plant.

It is well known that all attempts to grow the foreign grape profitably in ordinary vineyards throughout the Atlantic States have failed. The sudden, and oftentimes extreme, variations of temperature during the season of growth induce weakness, and its frequent consequence, mildew, both on fruit and foliage; at all times making the crop precarious, and ultimately causing the death of the plant. This is the uniform result of all experiments with the foreign vine. How is it with regard to the native? With most of the finer flavored and esteemed varieties, a tendency to injury from fungoid growths is the great barrier to complete success in grape and wine culture. Now we arrive at the question, If the partial failure of the best of our native varieties is due to their liability to disease, are we likely to secure a healthy variety by hybridizing with the foreign grapes that are confessedly subject to failure in consequence of diseased foliage? Will two wrongs make one right in this matter? My conviction is, that we shall more certainly succeed in securing a valuable improvement by crossing and hybridizing the best of the native kinds, keeping entirely clear of the weakness of the foreign varieties.

Even if it is considered judicious to hybridize the two species, it would surely be wise to employ only the hardiest and most robust varieties of each family; such as, for instance, the Clinton and the Sweet-water, or the Concord and Golden Chasselas: but, even with these, the chance of inherent weakness would, to a certain extent, exist.

A new grape-vine that is not of vigorous constitution is of but little value. Our nursery catalogues are largely made up of varieties that will never be generally planted; and notwithstanding the very minute descriptive and somewhat enticing notices of certain varieties, as well as the very demonstrative nature of the articles in their favor, the fact is conspicuous that these so-called *best* varieties are but sparingly planted, while those in many lists described as inferior, and unworthy of culture, are planted extensively. This shows better than any other example that healthy varieties even of inferior fruits are more valuable than fine-flavored berries on unhealthy plants. The sole cause of disease in the grape, so far as I can discover, is mildew. Some writers seem to hint that this mildew idea is a mere chimera of mildewed minds; but those who have for

years expended money and time in purchasing and cultivating new varieties know to their cost that it is something more than mere fancy that guides their opinion ; and the time is rapidly approaching when purchasers will be more cautious than ever in their expenditures upon new grapes whose merits are known only to the originators.

While on this subject, I would remark, that the statement occasionally met with in the rural papers, that the acreage in grapes on this continent is nearly two millions, has surprised me. Is this near correct ? I do not know how many acres of grapes may be found in California ; but, if there are more than fifty thousand planted this side of the Rocky Mountains, I should be pleased to know where they are.

W. S. W.

FERNS FROM SPORES. — Many writers, following either theory or practice, have given information and directions for raising ferns from the spores. The methods generally used, and the directions usually given, require a greenhouse, both for the raising and propagating of seedling ferns. Having made two or three attempts (without success) without a greenhouse, or artificial heat of any kind, but with bell-glasses, prepared earth, and careful watering, I finally determined to try the most reasonable, at the same time most natural, means of raising them that I could. I took a small Wardian case, about sixteen inches square and twelve inches high, merely mixed equal parts of rich peat with enough sand to make it crumble without soiling the hand, and filled and pressed gently down the earth into the pan ; then, taking the spores of as many different varieties of native ferns as I could procure, I dusted the surface over quite thickly with them, reserving a small space, about four inches square, in one corner, for some spores of Italian ferns, which were collected by a friend, and handed to me with the request that I would try and raise some seedlings from them. This was on the 10th of January. On the 15th of February, a little over a month, the earth seemed to become suddenly green : and, to my pleasure and astonishment, I found my spores of native ferns, which I had collected with care during last autumn, had made their appearance ; so had also the Italian ones, taken from plants collected as far back as 1854. This experiment, although the *simplest*, had succeeded wonderfully ; for, with a magnifying glass of moderate power, I could see the small specks of vegetation separately, which, when taken collectively, must have numbered millions, so heaped up on each other did they seem to be.

Instead of watering them in the usual way, I moisten both plants and earth with a gentle spray about once every twenty-four hours ; giving the case the sun quite freely in the early morning. They are now making rapid growth. I would not advise the use of *much* water on the *earth*, but on the *plants*, in the form of spray. I would advise a *moderate* amount of sun, — sufficient to produce condensation in the case. As this is the time to try an experiment of this kind, I make this communication for the benefit of those who are interested ; at the same time asking if this is not the simplest and most inexpensive way of raising ferns from the spores.

James L. Little, Jun.

OBITUARY. — It pains us to be obliged to announce to our readers the decease of one of our most valued correspondents. Mr. BURGESS TRUESDELL, well known by his ever-welcome articles upon horticulture at the West, died at Elgin, Ill., on Sunday, April 5. For some years, he had been in failing health; but his final sickness dates from Christmas last, since which time he has been confined to the house. As through the dreary days of winter his strength slowly failed, he had one intense longing, — to live till the summer, that he might be carried to the grave from the verdure and bloom of the beautiful garden of which he was justly proud. But, in the mysterious wisdom of an all-wise Providence, this wish was denied him. He lived just long enough to have the first early spring-flowers placed in his nerveless hand, though his dimmed eyes hardly recognized them.

Mr. Truesdell was born in Hillsdale, N.Y., July 23, 1800; and was an early settler of Dundee, N.Y.; whence he removed to Elgin, Ill., in 1838.

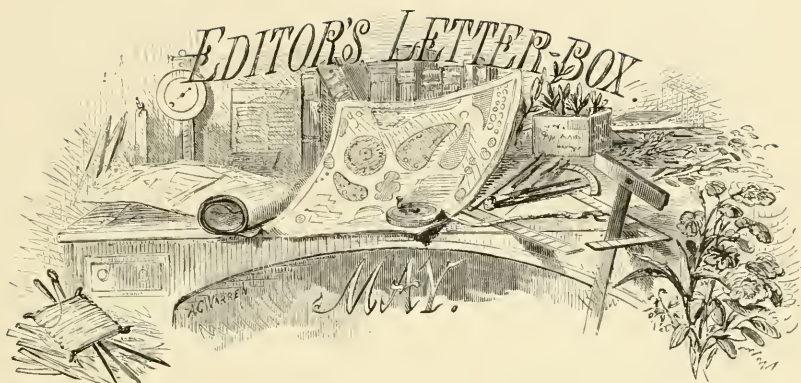
Botany and gardening were the pastime and recreation of his life. His letters show a mind in unison with Nature, a keen appreciation and love of her hidden beauties; a quick perception and a searching eye, which knew the floral mysteries which reward the diligent seeker; which see beauties in each leaf, a treasure in each flower, and find society in every thing that grows.

Personally, it was never our privilege to meet Mr. Truesdell, and our correspondence is not eighteen months old; but his letters overflow with genial thought, and show him to have been a true lover of Nature. Nor can we doubt that his love of the beautiful on earth led it often to the contemplation of that life where the beautiful is eternal.

In knowledge of prairie-flowers, Mr. Truesdell had no superior, as his papers contributed to this magazine richly show. The last paper he ever wrote is in our possession, and will at an early day be given to our readers.

Our garden is enriched with many rare prairie-blossoms kindly sent us by our departed friend, which even now are breaking through the cold earth to greet the warm spring sunshine. Are they not typical of that life upon which he has entered with the spring-days, in a realm where the winter-winds never blow, or frosts cut off the unfading flowers?

E. S. R., Jun.



THE Editors of "The American Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulturists.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

ORCHARDIST, Dayton, O. — What is the very best summer apple to raise for profit for the market? — Fruit-growers about Boston say the Williams is the best; for its magnificent color will always secure a sale for it.

F. H., Lynn, Mass. — Leaf so broken as to be undistinguishable; probably one of the nosegay section.

W. E. C., Plattville, Grant County, Wis. — The ivy-leaf sent is infested with common scale. On the upper side, the insect is *Coccus Testudo*, the turtle-scale; while on the lower side we find the oleander-scale, — *Aspidotus Nerii*. The remedy is very simple: Wash the leaves with strong soap-suds, scrubbing them with an old tooth-brush; or else touch the insects with a camel's-hair pencil dipped in kerosene.

The green worm that eats the buds of your roses is probably the larva of *Loxotænea Rosaceana* (Harris).

Species of *Tortrix* also infest roses, and destroy the buds. The only remedy is hand-picking.

Mrs. Anna C. C., Manchester, N. J. — 1. Cuttings of Dahlias will produce the same flowers as those of the variety from which they are taken.

2. Dahlias raised from seed produce new varieties.

3. Sow dahlia-seed in early spring, in pans with gentle bottom-heat.

4. Small tubers will be produced the first year.

5. It will not perceptibly injure your dahlia-roots if the plant is allowed to ripen seed.

6. It will not injure them to bloom freely; but you will not get fine flowers until the nights begin to be cool.

7. Sow gladiolus-seed in shallow pans in a frame; grow them in seed-pans one year, and plant out the second: they bloom the third year from seed, with common culture, but may be forced to bloom sooner.

8. The small gladiolous-bulbs produce the original variety.

9. Sow flower-seeds from April 1 to the middle of May, in the house or frames.

10. The varieties of dahlias run out after a time.

11. The original plants are not affected by being planted close together; but the seed may be affected.

12. Do not take the dead leaves from your strawberry-plants: they do no harm, and are soon hidden by the new foliage.

H. L. S., Utah. — There is no plant known to our gardens by the name of "Magnolia ever-blooming narrow-leaved catalpa." The magnolia and catalpa are very different plants. As you describe it, the flower must be very handsome. It certainly is not a magnolia, and probably not a catalpa. Send the leaves and flowers, and we can probably name it for you.

I. S. M., Philadelphia. — Mr. Rand has the article on "Flowers in City Yards" in preparation.

IDEM. — A flock of turkeys do much to destroy grasshoppers. Thanks for your fruit-gossip. A peach weighing a pound would be a good-sized fruit.

I. W. N., Cambridge City, Ind. — The grass sent is *Imperata saccharifolia*. It is hardy, and makes a very pretty clump in the flower-border.

W. B. C. asks "where a strawberry known as Beard's Seedling can be procured; at what price; and whether it is the same or similar to the variety known as Burr's New Pine. I am unable to find it in any catalogue to which I have had access. A full description would much oblige," &c. — We have never heard of the variety. If any of our readers can give the desired information, we should be pleased to hear from them.

W. S. writes us in relation to the Hebe Pear, a new variety, said to be of large size and good quality. Specimens have been raised that weighed twenty-eight ounces. It is a seedling of South Carolina, where it ripens in November and December, a winter pear. It is said to be beautiful in appearance. We hope to be able to procure specimens next fall from which to make a drawing. New fruits should always be indorsed by some pomological or horticultural society.

D. G. A., Alton. — My apple-stocks that I wish to graft are rather small, say half an inch to an inch in diameter. Would it be better to cleft or splice-graft them? — Should splice or whip graft all the smallest stocks, certainly. We often change the entire head of a tree eight or ten feet high by splice or whip grafting, thus preserving the form and symmetry of the tree.

A. B. M., Dayton, O. — The "early blue grape hyacinth" is *Muscari racemosus*: the true grape hyacinth, *M. botryoides*, is a later bloomer. There are white, pearl-color, dark-blue, very dark-blue, and light-blue species and varieties; but we have never seen a pink one.

SUBSCRIBER, Fitchburg. — The sprig of heath you send is *Gypsocallis carnea*. You will find it in nursery-men's catalogues as *Erica carnea*. Cover it with pine-needles in winter, and it will bloom freely about the first of May. It makes a very pretty companion to *Epigæa repens*.

MALDEN HIGHLANDS. — Certainly you can cultivate the "Mayflower" (*Epigæa repens*). Transplant it in the sod, and grow it in loam, peat, and sand, where it is not exposed to the full heat of the sun in summer. There is no real difficulty; and the idea that you cannot cultivate it is a popular fallacy.

I. L. M., Skaneateles, N.Y. — Czar and giant violets are very fine, and a great improvement on all the other violets. Queen of violets is a double white, large, but not worth growing. We have tried them all. *Viola lutea* will probably require frame-protection, as does *Viola cornuta* in most situations.

FLORIST, Cambridge. — The plant is *Rhododendron dauricum*, one of the earliest and best flowering shrubs, perfectly hardy, and always in bloom by April 25.

C. P. A. — I have Triomphe de Gand strawberry-plants set: shall I let them run, or keep them in hills? — Keep them in hills, certain: cut off all the runners as fast as they appear.

S. L. G., Bangor, Me. — I have purchased some of the famous "Rose Potato," and I wish to know how I can get the largest quantity of potatoes from them. — Place the tubers in a hot-bed or propagating-house, and start the eyes, and let the shoots grow until they have formed small roots; when these sets may be taken off and potted as you would pot dahlia-plants, and grow them in this way until the time shall come to set them out into hills in the field. The tubers will push out another set of sprouts, and may be cut up and planted as ordinary potatoes are planted, putting two eyes to a hill. It will be well to manure heavily, so as to get as large a crop as possible; for, if this variety shall prove all they claim for it, the potatoes will bring a good price for seed next year.

J. A. H., Northampton, Mass. — My arborvitæ and hemlock hedges seem to be badly injured by the winter. How shall I manage them? — In clipping them this spring, much of the injured part will come off. If any of the plants are actually dead, replace them. We notice that such evergreens are injured more when under trees.

IDEM. — The "earliest Tartarian Honeysuckle" is *Lonicera Standishii*. It blooms from the middle of April to the middle of May, according to location.

K. L., Hartford, Conn. — I have a few large pear-trees in my garden, that I wish to move next fall. It got to be rather late before it occurred to me that I wanted to remove them. They are thrifty trees. How shall I manage them? — Dig a trench all round the tree, four or five feet from it; and cut off many of the roots, so as to induce them to throw out more small fibrous roots; and then they can be removed in the autumn with greater safety.

L. G., Rochester, N.Y. — Does the Pemberton Pear, figured in your Journal, succeed well on quince? — We are informed by Dr. Shurtleff that he tried this pear on the quince-stock, and it has done very well.

D. W. B., Champaign, Ill. — Where can I procure trees of the Foster Seedling Peach? — Of G. W. Wilson, Malden, Mass. What is the price by the dozen? and what for a smaller number? — The price by the dozen, we think, is nine dollars, or seventy-five cents each. Single trees, one dollar.



PICKING AND RIPENING FRUIT.

THERE are few subjects more perplexing to the fruit-grower than that which we have taken for our text. A great deal has been written to prove this theory or that ; and the readers have not become much the wiser for all their reading. Now, we do not expect to throw much additional light upon the subject, or to succeed where others have failed ; nor shall we attempt any thing beyond giving a few plain, practical thoughts and suggestions on this important subject. There is no doubt that much of our fruit is injured in flavor by being picked too soon, or, oftener, by being allowed to remain on the trees or vines too long. We shall briefly refer to some of the early fruits, and then devote more space to the later and larger ones. The strawberry is the first fruit to ripen, and so demands a passing notice. The larger part of this fruit that is sent to market from long distances is picked before it is fully ripe, and before it has attained its highest flavor. Few fruits are better than well-ripened strawberries, and few are poorer than the same when picked too soon. One of the strongest reasons why we always encourage every person living in the country to plant a strawberry-bed is, that he may raise this fruit, and so have it in its greatest

perfection. It should be left on the vines until it has just matured ; and, if a red variety, until it is wholly colored, and has become tender and juicy. If left too long on the vines, the fruit will be quite likely to become dry and tasteless. It should always be picked with the hulls on, and when the fruit and vines are free from moisture : and the fruit should not be kept long after it is picked ; for it soon decays. It does not keep well, even in the patent fruit-houses. We know, that, in some markets, buyers object to having the fruit brought in with the hulls on ; but, if the consumers would only remember how much better it keeps in respect to shape and freshness when so picked, they would no longer complain because they have to hull them at home. Strawberries are packed in boxes and baskets to be sent to market : but the latter are doubtless better where the fruit is to be kept for any considerable length of time ; for the ventilation is better than in the boxes. Raspberries follow soon after the strawberries, and require pretty much the same treatment. When intended for home-use, they may be left on the bushes longer than when intended for market. Those varieties best for market are not generally best for family-use. A firm raspberry should always be selected for market-purposes. The currant and gooseberry are also fruits that should be allowed to fully mature on the bushes. There is one great advantage in the former ; for it will hang longer on the bushes after it is ripe than any other fruit, and will keep for a considerable length of time after being picked. Blackberries need to be ripened on the bushes to be good, and should always be left until full maturity has been attained. The Lawton is quite acid unless fully ripe. Plums should always be allowed to ripen on the tree ; that is, become nearly or quite fit for eating before being plucked. We do not know that they ever improve in the least after being gathered. The same is true of peaches, apricots, and nectarines : they all should be allowed to fully mature their fruit on the tree. Who would think of picking peaches green from the tree, expecting to ripen them up as they would pears ? To get this fruit in its fullest and richest maturity, let it become high colored on the tree, and ripen so that the slightest jar will bring it down to tickle the palate of its owner. Now, for market-purposes, where the fruit is to be sent long distances, we are aware that this plan would not answer ; for it would be almost impossible to get such fruit to market in fair condition. For this purpose, it is

picked days before it is ripe, and hurried off to the Eastern markets, where the people are glad to get even this poor, unhealthful, and sour fruit, because they can get no other that is better. There is a great advantage in raising one's own fruit, — certainly all the early fruits. The whole crop of the tree does not ripen at the same time ; so that, while some is fully ripe, other is still green. This is quite unavoidable, and is unfavorable for commercial purposes ; but is not objectionable where one has but few trees in the garden.

In regard to grapes, there is little fear that they will become too ripe at the North certainly, though they might at the West and South. An unripe grape is a very unwholesome thing ; but a fully-ripe grape is a fruit fit for any mortal. The riper, the sweeter and richer the juice, though there is less of it. The watery part seems to evaporate, leaving the rich juices in a more concentrated form. If used for wine, it is quite desirable that the fruit should be perfectly ripe ; for good quality is one of the first essentials of good wine. Better five hundred gallons of *good* wine than three times five hundred of poor, thin, watery stuff. Grapes for market-purposes may be gathered as soon as they have become sweet and palatable, and the work continued from day to day until the crop is disposed of. For late keeping, we should prefer *well*-ripened fruit. More fruit is yearly consumed in an unripe state than is left until over-ripe.

Early apples will ripen if picked off some days even before they are fully grown ; though we know of no variety that is not much improved when allowed to mature on the tree. We know that this is often inconvenient and unprofitable : for, if so treated, they drop a few at a time ; which will do very well for home-use, but is not profitable for market-purposes. Some of the best cultivators about Boston plant largely of the Williams Apple, — a very handsome early variety. Mulch the ground under the tree with hay, and let the apples drop ; and, where there are several trees, a bushel-box or more can be gathered each day, and the fruit sent directly to market. If early apples are plucked from the tree before they have fully colored and matured, they will, it is true, become mellow and eatable if properly treated by being shut up from the air, or even if exposed for a while ; but they never will have as good a flavor as those which fully mature and drop from the tree. The fall apples are very much like the summer, though they do not suffer

in flavor so much by being picked and ripened off the tree. Winter apples are an exception to the rule, or seem to be. If picked from the tree when quite hard, and placed in barrels, they will remain hard for a long time, and then at last ripen up finely. They cannot be allowed to ripen on the tree; for the seasons are not long enough: it is possible, if they could, that they would be very much better in quality. We know that the Baldwin Apple (and we presume this to be true of other winter varieties) will, if picked when not more than two-thirds grown, so far ripen as to become mellow and soft, but will not attain much flavor. It is sometimes difficult to know just when to pick winter fruit, the seasons vary so much. The best way is to leave the apples on the trees, if they will only remain there, until the last of October, and pick last the varieties that are latest in maturing, such as the Roxbury Russet and Northern Spy. When picked, they should be at once packed in barrels, and placed in a cool, dry place, — as cool as possible without freezing. A cold, dry atmosphere is the true principle in preserving all fruits. It is this that is claimed to be gained by the patent fruit-houses that have been erected during the past year or two. If the fruit is to be kept all winter, place it in the cellar, and keep the windows open so as to keep the temperature as low as possible without freezing. When it is desirable to forward the ripening of any of the winter varieties of apples, it can be done by bringing them into a warm, close place. Great care should be exercised in picking and packing all fruits intended to be kept for any considerable length of time, or to be transported to market. They should be kept as free from bruises as possible, both to insure their long keeping and for the benefit of the flavor; for it is seldom so good in a bruised, imperfect specimen as in a clear and fair one. If more attention were paid to this important subject, and to the sorting of the fruit, it would be far more profitable for the producer, and, in fact, for the consumer. We have seen scores and hundreds of barrels of apples sent two or three hundred miles to market by cars, that were so badly packed, that they were nearly worthless when they arrived at their destination. It is of the very highest importance, when fruit is to be sent a long distance to market, that only the best should be selected.

Some producers think they can work in a portion of second-rate fruit which will not be discovered. It is possible that such things may escape

detection ; but generally the result is to greatly reduce the price of the whole, and render them unsalable. Such shipments seldom pay ; and the sooner the fruit-grower comes to learn the folly of such a course, the better. This does not apply to apples alone, but may be said in regard to other fruits. It is more important to remember it in connection with the apple, because it is the most important fruit of the country, and is regarded, of all others, the most indispensable for general purposes. We pass from apples to pears, — a fruit that is yearly attracting more and more attention. The most skilful fruit-growers have often been puzzled and perplexed in their attempts to bring to the greatest perfection the *Easter Beurré* and other late-keeping varieties. We hear some one strongly condemning this or that variety ; when, in fact, the fault is their own : they do not know when to pick it, or how to ripen it. All pears, we believe, are better for being ripened off the tree ; and, in this respect, are the very opposite of the peach. And not only are they much better for being ripened in the house, but better for being properly treated even there. The very earliest pears — which are never so good as the later ones — are, nevertheless, very much improved by being picked a few days before they are eatable, and laid away in a fruit-room. We well remember that we used to think, when a boy, there was no place like a hole in the hay-mow to ripen pears and apples. It will do the business pretty quickly too, though an unpleasant flavor is imparted to them. The early pears, ripening as they do in the summer or early fall while the weather is quite mild, need to be kept in a cool and dry place, so that the ripening process may be retarded as much as possible, with a part, at least, of the crop. As the days and nights become cooler during the very last of September and October, there is less danger of loss from the decay of fruit. The *Bartlett*, the most popular pear of the country, is an entirely different thing when picked and ripened artificially. There are few varieties that can be so easily managed as this. As it is a very great bearer, it often becomes necessary, and is, in fact, very important for the good of the tree, to pluck off a part of the fruit when two-thirds grown. Even such specimens, if laid away in a tolerably warm place, will become quite palatable, and may readily be sold in market. This pear becomes almost worthless if allowed to fully mature and drop from the tree. The *Swan's Orange*, another well-

known and very handsome fruit, more perfectly illustrates the importance of early picking. We well remember one year picking this variety as early as the 20th of September, and were surprised to find it so good a pear. The next season, for the purpose of trying the experiment, we left them on the tree until the 10th of October, or thereabouts ; but these last never ripened so as to be worth eating. We had a similar experience with the Buffam ; a very good pear, by the way, when raised on dry, warm land, and gathered at the right time. But some varieties are more difficult to manage, such as Flemish Beauty, Beurré Diel, Figue d'Alençon, and others that are inclined to rot at the core, — a fair exterior, but false within. The only way we know is to pick them early, and use them as soon as they mature so as to be in eating condition. The Clapp's Favorite, if left too long on the tree, is almost certain to decay at the core ; but, if picked soon after the imperfect fruits that drop become soft and eatable, they will ripen splendidly, and be perfectly sound clear through. We know of few pears where the advantage gained from early gathering is so clearly manifest as with this new and popular sort. It is generally safe to say all the summer and fall pears will mature, even if picked as soon as fully grown ; but they seem to improve after this time, or for a few days. No positive rule can be laid down as to time that will apply to all sections of the country and to every season. The grower of fruit must watch carefully, and by experiment test the question for himself. If we have dealt successfully with the early and the fall pears, what shall we say of the winter varieties ? A few years ago, a friend of ours claimed, and still claims, that he can ripen the hardest and most unpromising specimens of winter pears, even the Easter Beurré, so that the shady side will become melting. He also claimed that he could retard the ripening process so that Seckels could be had in perfection in January and February. If this should prove to be really so, — and we see no good reason why the latter part, at least, may not be done, — it would be a valuable discovery ; for all growers of winter pears have to confess their inability to fully mature some varieties. We well remember, several years ago, being at the house of a friend who was considerable of a fruit-grower, and hearing him tell of some winter pears that he had raised, but had never been able to ripen, and so concluded they were only cooking-pears. We asked to look at them ; and he brought up from the cellar several of the

largest specimens of the Easter Beurré that we ever saw. On further inquiry, we found he had a bushel or two ; and we suggested that we would like to take a few home with us, to try and see what we could do with them. About two weeks afterwards, we took to him one of the same pears, that was found to be, when cut, melting and delicious. He found no difficulty in succeeding years in ripening this fruit, and selling it for a high price. We ripened this fruit in a warm closet. Not all winter pears are so difficult to manage.

We find the Lawrence Pear to be just as easy to ripen as the Baldwin or any other apple. We have picked them at the same time, and treated them precisely in the same way, we have our Rhode-Island-Greening apples ; and have found them, when the barrel was opened some weeks afterwards, colored up beautifully, looking like a barrel of lemons, while they were melting, sweet, and rich. It makes little difference how this pear is ripened : it is always good. Of all the winter pears, we know of none that has proved more satisfactory than the Lawrence. We might go on to speak of many varieties and their peculiarities, but feel that we have referred to enough to illustrate our views. The whole subject is worthy to and should receive more attention from practical men ; for, after the fruit is produced, it should be so managed as to contribute to our enjoyment to the fullest possible extent. Under all the circumstances, what shall we advise ? For home-use, leave strawberries on the vines until fully ripe ; for market, gather them a little before they have reached this state. Of raspberries and blackberries, we make the same remark. Gooseberries and currants, plums and grapes, should be fully ripe before being picked, if intended to be eaten uncooked. Peaches, nectarines, and apricots, for home-use, should fully mature on the tree ; if for market, can be picked a little earlier. Summer and fall apples are better for ripening on the tree ; while summer and fall pears are very much better for being picked before fully ripe. Winter pears and apples should be left rather late. We hope the above hints and suggestions may be of use to at least a portion of our readers.

THE LANTANA.

AMONG bedding-plants, the lantana holds the foremost rank : indeed, it is only as a bedding or summer-blooming plant that it is deserving of cultivation. The genus, to which are referred some fifty or more species, belongs to the natural family *Verbenaceæ*. Most of the species are natives of the warmer parts of America, and are generally shrubs with axillary heads, rarely spikes, of flowers, which are white, purple, lilac, rose, yellow, or orange ; the same head often containing flowerets of various colors.

We have said these plants were only valuable for bedding ; for though, if well grown in heat, they are evergreens, bloom freely, and make pretty specimens, they are of no value for bouquets, both on account of the flowerets falling soon after they are cut, and because the whole plant has a rank and unpleasant odor which is very disagreeable to most people. It is one of those plants which would be very pretty and popular if we had nothing more desirable ; but, when there are hundreds of more desirable candidates for greenhouse-culture, none will grow lantanas.

But, as a bedding-plant, we find few to compare with it for ease of culture, for free-flowering habit, and brilliancy of bloom. The flowers resemble a verbenas ; but the heads of bloom are smaller and more compact. The plant is usually more bushy, and gives us colors which are wholly wanting in the verbenas.

We are aware, that, while verbenas are grown everywhere, we seldom see lantanas, and this for two reasons : first, the plants are not generally known ; and, second, many who have tried their cultivation have failed from bad management, and attribute to the plant their want of success.

The general error is in giving the plant too rich a soil. Most of the species are naturally rank growers, and, if planted in a rich border, grow all to bush, and give few flowers, or just begin to show full bloom as the frosts of autumn kill the plant.

As a small plant only a few inches high, and which can be obtained of any florist, will by September cover a space three feet in circumference, the object of our cultivation must be to obtain the most bloom from the least bush. This can readily be accomplished by setting the plant in a sandy soil instead of in a richly-manured bed.

This will tend to repress undue luxuriance of growth, and promote the production of flowers.



Let us follow a *lantana* through the year. The plant is purchased in

May in a thumb-pot : it may then be six inches in height, and have a dozen leaves and blossoms. At once turned into the garden, it begins to grow, and, if in not too rich a soil, will by August be of good size, and a mass of flower, and so continue until the first frost, which will blacken the foliage, and often injure the plant. The old wood is, however, seldom killed : therefore, after frost, the plant should be severely shortened in, potted, and placed under the greenhouse-stage, where it should be allowed to remain in a half-dormant state until February ; but little water being given, and the heat being not sufficient to start it into active growth. About the middle of February, the plants should be brought to the light, and freely watered : they will soon begin to grow, and produce young shoots freely, which should be struck as cuttings in sand with gentle bottom-heat.

The old plants may be turned into the border as soon as all danger of frost is over, and will produce an abundance of bloom during the summer. This treatment may be continued year after year until the plants become too large to be easily managed, when they may give place to younger stock.

The plants may also be preserved during winter in a dry, warm cellar, but not so well as in a greenhouse.

Some of the species are of low-trailing habit, and make fine beds ; but the greater part of those in cultivation are of upright growth, and should be massed in beds by themselves, where they produce a very fine effect, particularly if the varieties are judiciously selected. Many species produce berries very freely, and thus we have many seminal varieties which are superior to the species : of these, a few of those of recent introduction are shown in our illustration.

To produce seedlings, we have only to sow the seed in sandy loam, in gentle heat, and pot on the young plants.

It is difficult to give a list of species as those first introduced ; in fact, the originally cultivated species are now very seldom grown. Their place is supplied, however, by a host of seminal varieties which are of neater habit and of more brilliant flower. These change from year to year ; though with lantanas, as is the case with most bedding-plants, the new varieties are not unfrequently inferior to the old. The following are, however, good varieties :—

White. — *Alba*, *nivea*, *Victoria*, *candida*, *Eugenia*.

Yellow, or *Orange*. — Mons. Bucharlat, Doniana, aurantiaca, fulgens, xanthina, Julius Cæsar, Adolphe Hivass.

Rose, or *Purple*. — Marcella, rubra lutea, L'Abbé Leuterre, Charlotte, Raphael, splendida, Valencia, delicatissima, Madame Dufoy.

These colors hardly give a perfect idea of the true shades of the flowers : for one peculiarity of the lantana, which adds greatly to its beauty, is the combination of different colors in the same truss ; the orange and yellow often changing to rose or red, and the expanded flowers of every day presenting various shades.

The old and well-known kind, *L. Sellowiana*, which much resembles a rosy-purple verbena, is a very good plant for a low bed. *E. S. R., Jun.*

GLEN RIDGE, May, 1868.

TIME FOR PLANTING STRAWBERRIES.

SOME advocate setting strawberry-plants in the fall ; others in June or July ; and still others, and we believe the larger number, think the last of April or first of May the better time. After many years' experience, we have no hesitation in saying that the best time of the whole year is the spring. The frequent and genial showers of that season are favorable to the growth of the plants ; and they soon get hold so as to be able to withstand the heat of summer and the frosts of winter. When set in summer, unless frequently watered, the plants soon dry up and die. If set in the fall, they are very likely to be thrown out and destroyed the following winter.

GRAFTING.

MANY persons who have trees in their gardens of poor varieties neglect to graft them year after year, and lose much valuable time. They raise poor fruit, or none at all, when they might raise good, and plenty of it. Some wait because the tree is not large enough to graft, as they think ; and it may not be for cleft-grafting ; though, if the scions selected are small, a small stock may be successfully grafted by this mode. When the stock is quite small, "spliced" or "whip" grafting is better ; and it can be done so as to preserve the symmetry of the tree.

EIGHT DOLLARS AN ACRE.

THE contrast between successful horticulture and what is accepted as successful farming seems to involve the most extraordinary contradictions. Success may be regarded as an arbitrary term ; a sort of indefinite quantity, a certain measure of which is in one case accepted as positive abundance, and in another as an equally positive discouragement. It really means that annual gain which may be sufficient to satisfy the ambition of both farmer and fruit-grower, no matter how many dollars it may in either case amount to. The former is educated to be content with moderate profit from a hundred acres : the latter is dissatisfied unless he realizes thrice as much from a tenth of the same area. It is, moreover, a relative term. With the farmer, it is probably the disposition to be satisfied with moderate gains that really constitutes what he would call success. Hence there are striking contrasts between the two pursuits. Looking over a recent agricultural paper, I came upon the following paragraph from the pen of a Vermont farmer : —

“ My farm consists of a hundred and twenty-five acres, and had been let for many years, and was generally considered run out. Sales of produce and stock amounted to \$1,699.88. The increase of stock was enough to balance the sales. Expenses of all kinds, together with \$300 which I charge for my own work, \$967.00 ; leaving a balance for profit of \$732.68. This, I think, is better than money at six per cent, and answers the question as to whether farming is profitable.”

Now, I doubt not there may be farmers in New Jersey who scratch over the same number of acres with no better success than this ; though, so far, they have escaped my observation, having never gone in search of such. But here a gain of less than eight dollars an acre is quoted as settling the question that farming is profitable, and better than money at six per cent. A statement like this will astonish all within the fruit-producing sections of this State. The poverty of the return is as discouraging to us as the cheerful complacency of the writer is delightful. He is not only contented, but jubilant, — jubilant over eight dollars an acre. But that modicum is to him a success ; and seeing that his wants are so circumscribed, and his ambition so fully accomplished, I would leave him “ alone in his glory.”

This man may not live long enough to die rich ; but, on the other hand, we may be sure that he will never become insolvent. The moderation of his wants gives assurance of pecuniary safety. His gains, though small, are steady and certain ; his aspirations are few, and cheaply supplied ; and he indulges in no extravagances. His ultimatum is six per cent. The long catalogue of American insolvents contains the names of few who are farmers. It is the men who grasp at two per cent a month who lose all, and fail. The thousands, who, in great financial dislocations, come down from a condition of luxury, have not been farmers. It is the merchants and manufacturers, the speculators and the adventurers, who do so. Every panic that convulses the country brings multitudes of them to grief, until bankrupt-laws are found necessary to relieve them. Eight dollars per acre comes up in strange contrast with a brown-stone mansion at a rent of ten thousand a year ; but, when its gay occupant has gone forth by invitation of the sheriff, how much greater does the contrast become ! The picture, like all others, has two sides ; and the brown-stone mansion with its luxurious appurtenances cannot be pronounced a success.

The conditions necessary to prosperity in rural life are various. In horticulture especially, the primary one is that of being as near as possible to the largest market, — one which no supply can glut. There are hundreds of villages in which the product of two acres of strawberries would prove an overwhelming surfeit ; but New York and Philadelphia have never yet been glutted. Thirty odd years ago, before the railroad between these cities was built, we had the same teeming sandy loams that we have now, as ready then to yield up a generous fruit-crop as one of corn or rye. But no market was at hand. Philadelphia, only twenty miles away, was too far to wagon to it the perishable fruits. The distance, already great, was made greater by reason of roads intolerably sandy. It was therefore useless to produce fruit which it was impossible to deliver promptly to the consumer. Some, however, whose land bordered on the Delaware, managed occasionally to reach the city by means of shallops. But the contingencies of wind and tide were such, that no one could be certain of getting there on time. If arriving too late, or if detained too long *in transitu*, the market-hours were over, the fruit was in a perishing condition, and prices sunk to almost

nothing. Hence the absence of a market discouraged all extensive effort at fruit-growing.

But the opening of the great railroad between the two cities quickened the whole fruit-region of New Jersey into a golden life. It traversed that peculiar belt of land in this county which has since become famous for its fruit-crop, and created a market for whatever it could produce. It supplied the sole want of our location, by letting out our products, and letting in a stream of wealth from distant cities. Heretofore we had glutted every little village community with strawberries at sixpence a quart ; but now we were left free to grapple with great city appetites, whose consuming voracity we had no means of estimating. Our warm and genial soil, moreover, ripened all the fruits a week to ten days earlier than New York and Boston had been accustomed to ; and prices went up encouragingly under the new demand upon us. Sixpence ceased to be the standard for strawberries. Even the heretofore-surfeited villages were compelled to advance with the improved tariff. Demand stimulated production ; production was found to be exceedingly profitable ; it brought in an enormous aggregate of money with which manures were purchased : land was enriched, better houses and fences were built, and splendid gravel turnpikes superseded the old sandy thoroughfares. The foundation of this remarkable transformation lay in the unlimited market which the railroad brought to our doors. Without it, we had been a hissing and an astonishment to the world ; but with it, if the hissing has ceased, the astonishment continues.

I admit, that, up to the advent of the railroad, the Vermont example of eight dollars an acre may have been thankfully accepted by hundreds of cultivators in this vicinity. They, like the Vermonter, could do no better, and were contented ; for they also counted even that a success. But that generation has left the stage of active life, and been succeeded by another, which, like our horses, has been educated to the railroad. Within twenty years, rye has given place to asparagus, which we plant in great fields of ten to twenty acres. Well planted, it will cost a hundred dollars to set an acre : but it will continue productive for twenty years ; and, if properly cared for, will clear two hundred dollars annually. It comes gratefully into market directly after the ground is clear of frost, and is eagerly sought after in every market. There are men all round me who have made small

fortunes out of this single article. Then comes the strawberry, for which there is the same ever-recurring public impatience. I have seen patches of this fruit, from which the runners have been carefully cut, and the plants covered with coarse manure in winter, from which a clear profit, over picking and marketing, of five hundred dollars per acre, has been realized. I know that there are hundreds who do not clear a fifth of this per acre ; but the difference does not lie either in the soil, the berry, or the market, but exclusively in the man. It is not muscle that produces the strawberry-crop which carries of the top price in market, but brains. Yet so wonderfully hardy is this plant, and so generously does it bear even under the unkindest treatment, that the veriest sluggard has been known to greatly exceed the Vermont standard of eight dollars per acre. Thus one acre of strawberries can be made to produce as much as two of asparagus.

These continue in bearing until the raspberries are ready to be picked. Now, two acres of raspberries will require no more labor to keep them in condition than one of strawberries ; yet it is an every-year result to take three to four hundred dollars' worth of fruit from a single acre. The reasons for this are conclusive. The plants do not blossom until after the very latest frost has fallen : hence the crop is never blasted. The raspberry is a universal favorite ; and the supply is never up to the demand, as its cultivation has been strangely neglected : hence it commands high prices. The improved varieties are enormous bearers, making the aggregate receipts from an acre so large as to be almost incredible. Even from the common purple-cane variety, I have known sixteen hundred dollars' worth to be gathered and sold from a field of three acres. From all the facts occurring around me, it would seem impossible to suggest a more advantageous investment than that of raspberry-culture.

This fruit has hardly disappeared from market when the blackberry comes in to gratify with a new sensation the still-unsated appetite of the millions who reside in cities. Many varieties of this fruit are competing for public preference. The Dorchester and Lawton are most generally known, and have been longest tested. I presume no one will dispute the earliness and lusciousness of the Dorchester, nor the vast productiveness of the Lawton. Last year, one of my neighbors sold eight hundred dollars' worth of the Dorchester from the first week's picking upon two and a half

acres. It ripens very early, retains its color after being picked, and is of undisputed flavor. If not bearing so profusely as the Lawton, its earliness brings up the difference in the cash result. Two acres in this fruit will require less looking after than one of strawberries. But the grower of one berry should have all three. As they ripen in succession, not interfering with each other, a continuance of cash receipts is secured until peaches and grapes come in. The same boxes answer for the three crops. If one of them should be shortened by rain or drought, the others will be pretty sure to escape. Thus, our eggs being in different baskets, we can afford a smash-up in one of them without a ruinous result.

Here are, say, seven acres devoted to asparagus and the berries, planted and cultivated as a specialty. There will be no really hard work in properly attending to them. It is care, attention, with *brains*, that are required, — more head-work than hand-work. How astonishing the contrast between the product of such a field and that of the Vermont farmer, who toiled over a tract of a hundred and twenty-five acres to secure a return of only seven hundred and thirty-two dollars! How little that worthy and contented man can know how other people live! Eight dollars an acre! Yet I should be unwilling to disturb the perfect satisfaction which this modest return appears to have brought with it. His happy temper shows us that contentment does not consist in the number of dollars that one annually gains, and that money is far from being every thing in this world. True comfort lies in a nutshell.

“ The birds singing gayly, that come at my call, —
Give me these, with sweet peace of mind dearer than all.”

But, changing off for a moment from fruit to truck, let me give some items from the note-book of a small trucker. He marketed a hundred dollars' worth of tomatoes from one-third of an acre; from a quarter acre of cante-
lopes, fifty dollars; from another quarter acre in early cabbages, fifty dollars; from two and a quarter acres in turnips and tomatoes, four hundred and eighty-eight dollars and fifty cents; and from the fortieth of an acre of onions and peppers, twenty-five dollars; making a total of seven hundred and eleven dollars and fifty cents from less than four acres of extremely light land, or within a trifle of the gain upon thirty times the same number of acres devoted to grass and grain in Vermont. True, the Vermont farmer

is not alone. Even the choicest Pennsylvania land, within thirty miles of Philadelphia, sometimes affords an equally meagre return. A Pennsylvanian came here recently in search of a location among us. He owned a farm of a hundred acres, worth fifteen thousand dollars ; and mentioned that the County Agricultural Society had awarded him the premium for the best cultivated farm in the county. Here was the indorsement of competent judges that he understood his business. But he admitted that his profit at the year's end had only once amounted to five hundred dollars.

Statements of similar unpromising character have been made by strangers from the North and West ; so that my quiet Vermonter will find himself only one of a large company. I cannot believe, however, that such unremunerative returns for capital and labor are general ; and am sure that there must be facts to temper and account for them. Farming on a large scale must unquestionably pay, or it would be quickly abandoned. These cases are cited only by way of contrast with the results of fruit-growing and trucking in a region where the markets are so large, that every thing we produce commands the highest price. But it must not be supposed that all fruit-growers succeed ; for such is not the fact. Nor do all lawyers or doctors or storekeepers. These several occupations are intrinsically desirable, and we see that men grow rich by pursuing them. But success depends as much upon the man as upon the occupation. A careless, idle, inattentive horticulturist will fail as certainly as a shiftless storekeeper or a lazy doctor. Success comes of industry and brains. Without them, one need not hope for even eight dollars an acre.

Edmund Morris.

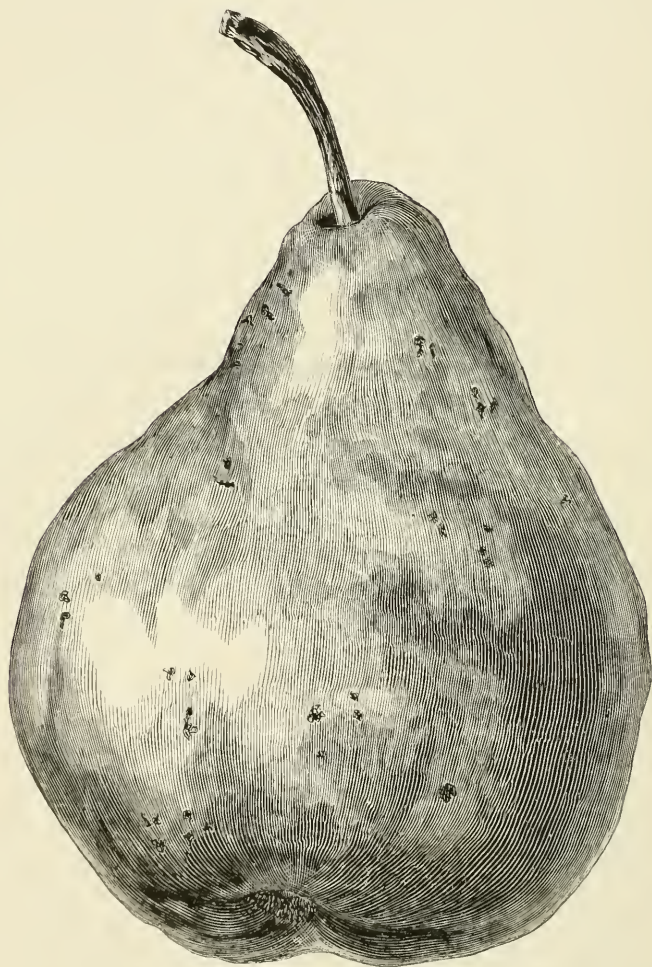
BURLINGTON, N. J.

MULCHING TREES.

NEWLY-set trees should, if possible, be mulched, unless on quite moist land. Though the early part of the season be wet, yet, when the dry, hot weather comes on, the trees will be quite likely to suffer. Hay, leaves, straw, almost any thing that will keep the ground moist, can be used to advantage. Where nothing else can conveniently be had, stones may be used. If leaves are used, it is better to cover with some earth to prevent them from blowing off.

SAINT CRISPIN PEAR.

THIS comparatively new pear was raised by Mr. Israel Buffam of Lynn,



Mass., and named by his son, Edward Buffam, in honor of the patron saint of shoemakers, "St. Crispin."

In size large, often weighing fourteen ounces each ; in shape somewhat resembling Beurré Bosc, but thicker, and tapers quickly ; stem about an inch long, curved, rather slender, set on one side in a slight irregular depression ; knobby like the Bartlett ; form obtuse-pyramidal ; color pale yellow, with a bright-red cheek, and stripes and blotches of russet ; calyx rather small, closed, in a narrow, ribbed, and russety basin, which is not usually opposite the stem, the fruit being larger on one side ; flesh yellowish-white, fine grained, melting, very much resembling the Bartlett ; flavor a pleasant sub-acid. Ripe about the 20th of October, but keeps well for weeks.

This variety is said to be a strong grower and great bearer ; and it is claimed by those who have raised it to be superior to the Bartlett in its keeping qualities, and fully equal to it in flavor. We have never seen but a single specimen of this pear, and that failed to meet our expectations ; though we are aware that all fruit last season in the New-England States was, for various reasons, of very poor quality.

We shall watch this new candidate for public favor with some interest, and report results.

DEEP PLANTING.

THERE is great danger in planting trees that they will be set too deep, especially where the land has been trenched, or very deep holes have been dug and then filled in. We have known novices in tree-planting to so set trees that many of them never grew well, while others nearly stood still for years, and all because they were set too deeply. The willow and some other trees do not seem to mind it much ; for they soon throw out a set of roots higher up than the original, and begin to grow. This is not so readily done, if at all, by fruit-trees. Our rule is to set trees from one to two inches lower than they stood in the nursery-rows. Dwarf pear-trees are a partial exception to this rule, and will bear to be set deeper than some trees. Avoid too deep planting.

NOTES ON PEACHES IN THE WEST IN 1867.

PEACHES went through "much tribulation." In March, about the 24th, a careful examination of buds in my orchard disclosed the fact, that, on the average, three-fifths of the fruit-buds were killed. This, however, left more than enough for a heavy crop of fruit. On the morning of the 7th of May, the thermometer stood at thirty-two degrees. At this time, peach-trees were mostly just out of bloom, but had not cast the enveloping calyx from the young fruit. Thus while apples in full bloom, and pears, suffered extremely, peaches, to a considerable extent, escaped. Hale's Early, Early Tillotson, Troth's Early, Red Rareripec, Magnum Bonum, Columbia, Late Admirable, White Heath, Delaware White, and Smock were quite full of fruit. Crawford's Early, Yellow Rareripec, and Crawford's Late, were badly thinned out; whilst such sorts as Large Early York, Morris White, La Grange, and Heath Cling, had a medium crop.

During the early part of the season, well into June, there was excessive wet, and after that period a prolonged drought, lasting entirely through the peach season, and showing its effect in the diminished size of the fruit, and, in some cases, in a lack of well-matured specimens; but, as a general rule, the drought was more favorable to the ripening of reniform varieties than the weather of ordinary seasons.

Hale's Early was here decidedly in advance of any other variety in its period of ripening; and this is the general experience, although our Kentucky friends report it as no earlier than Early Tillotson with them the past season. Here I began picking and shipping it five days in advance of the Early Tillotson, six before Troth's Early, and fourteen before Large Early York. It is a highly-colored and beautiful peach, of good quality, and great hardiness and productiveness. The tree in its young growth is vigorous; but later I see a whitening of the surface of the leaves such as accompanies mildew. Whether this is a cause or effect of rot, I cannot now determine; but here, and nearly everywhere, the report is, that this variety is rotting. The early part of its season, the fruit of this sort began to rot with me, especially on some trees standing on richer and lower ground. Then the sudden drought seemed to check the farther propagation

of rot, and the remainder of the crop ripened without serious damage. It is one of the mysteries of peach-culture that a variety of such apparent health as this, having globose glands, making strong tree-growth, and enduring cold well, should be so subject to rot in its fruit. Two reasons suggest themselves to my own mind: first, the smoothness of the skin, which renders the fruit more liable to puncture by insects, which opens the way to attacks of rot; and, secondly, the soft and watery fibre of the fruit, in which decay travels with greater rapidity than in the sorts of firmer and dryer flesh.

Early Tillotson. — This variety, in common with other varieties with serrate leaves, is being discarded in the West, although an early and good peach. It appears to succeed best in the stronger soils, on account, I suppose, of its weaker vitality being better sustained. This year, its fruit was very small, defective, and indifferent.

Troth's Early. — This variety came six days later than Hale's Early, and is one of our most approved market sorts. It is very nearly or quite identical with Haines's Early and Cole's Early wherever I have seen those varieties. It is very beautiful, very good, and remarkable for its uniform fairness, and freedom from defects. The tree is very vigorous and healthy. It is a little remarkable that this very excellent peach has not even yet become generally distributed. Whilst very popular in New Jersey and in "Egypt," there seems to be little account made of it in many peach-growing localities.

Large Early York. — This came seven days later than Troth's Early, and is one of the finest of its class. Very good, or nearly best, in quality. It is large, handsome, and has a vigorous and productive tree. It is a little liable to defects from puncture; its skin being rather smooth.

Crawford's Early ripened very nearly as soon as Large Early York. The yield was quite small, and the fruit not so generally fair nor large as could be desired. It is a great pity that a peach so easily killed in the bud, and so poor in quality, should, merely from its fine color and large size, have attained such a wide-spread popularity. Equally hardy, much better in quality, and almost as early, is

Yellow Rareripe. — This variety was also much thinned out by the late frost. Its deep red-and-orange color, large size, and well-rounded form,

give it a richness of appearance well sustained by its fine quality, and much unlike its gaudy predecessor.

Red Rareripe. — Under this name I had a peach, ripening with or a little earlier than Yellow Rareripe, that in productiveness, fine quality, and appearance, was equal to the Large Early York, and milder and sweeter in its flavor. I suppose it may be Morris's Red Rareripe. Under whatever name, it is worthy of cultivation.

Oldmixon Free. — (Why will nursery-men and others persist in writing it Old Mixon, just as if there were a *New Mixon*?) I have not planted it extensively; but it is one of the most satisfactory peaches we have. It is the one peach against which I hear no objections urged; while its positive merits of health, productiveness, fine quality, and appearance, are equalled by few.

Bergen's Yellow. — This fine variety I do not have in my orchard; but my friend Dr. Hull, with whom it is a great favorite, says that it has been, in common with other varieties with reniform glands, of very fine quality the past season. This variety is generally not productive, and is to be commended more for its fine quality and large size than for the amount of fruit it carries.

Morris White. — This variety generally does not mature in good shape with us: it often mildews and cracks. When well ripened, it is of fine quality; but, like other white peaches, does not sell as well as the higher-colored red or yellow varieties.

Magnum Bonum is a large, handsome, and productive sort, but hardly of first quality, if I may judge from the experience of one season. It ripened here the past season with Morris White.

Hacker's Seedling, as grown at Makanda, Jackson County, in this State, is an excellent and handsome variety, but has not been thoroughly tested.

Late Red Rareripe. — It is probable that this sort, under the name of George the Fourth, has been grown about Alton for many years. It ripens with the Late Crawford, and is highly valued as a productive, handsome, hardy, and excellent peach for market or home use.

Crawford's Late. — This variety I picked about the 10th of September. The fruit was much thinned out by the frost; but that which remained was larger and finer, perhaps, than Crawford's Early. It had a larger propor-

tion of its fruit-buds killed than any other variety in my orchard ; and I am confident that the variety last mentioned would be more satisfactory to grower and consumer.

Stump the World succeeds excellently well at Alton.

Columbia. — This unique variety is generally a little in advance of Crawford's Late. It reproduces itself from the seed with considerable exactness. It is one of our finest sorts, when well ripened ; but, being one of the sorts with reniform glands, it does not ripen well the heavy crops that it sets. Well thinned, its size, rich color, and luscious flavor, are hard to surpass. I am growing this a good deal as a seedling, and find that with some little variations in color, and time of ripening, that are hardly noticeable, the trees continually produce Columbias. This variety was described fifty years ago by Coxe, but was introduced here, under the name of "Georgia Seedling," from the South. It is described by Berckmans in his catalogue as "buttery, melting, and exceedingly rich. Ripe about July 20, and continues for a month ; a popular Southern type, which is easily reproduced from seed."

Late Admirable came in four days in advance of Crawford's Late. It was very large and excellent, besides being productive. It is not so highly colored as one could desire for a market-peach, but is still worth planting.

White Heath Free or *Kenrick's Heath* was this year a peach of fair quality, and bore satisfactory crops ; but I am not convinced that it is a desirable sort for our region.

La Grange, the past year, was one of the very finest. For family use, we consider it in this section one of the best.

Ward's Late Free. — This variety is very satisfactory in other parts of the State. I have seen no fruit here.

Delaware White. — This variety, which we do not find under that name in the books, may be Crockett's White. It comes nearly in the season of the Smock, or possibly later ; bears full crops of fruit of good quality ; and, judging from my short experience and several authorities, is quite desirable as a market-peach.

Smock. — This variety gave good satisfaction, as usual, everywhere that it was heard from. Hardy, vigorous, and productive. Its one fault of not being quite good enough can easily be pardoned.

Heath Cling. — Some of the finest specimens of peaches I have seen the year past were of this variety. Although defective in many seasons, it ripened up finely in the hot, dry autumn ; and was juicy as horticultural heart could wish.

October Yellow. — A variety from Indiana under this name produced fruit the past season for the first time. It is a yellow freestone peach of rather small size and very good quality, ripening between the 1st and 10th of October. Having specimens only on a single tree in a peculiar season, I consider it too soon to judge fairly of its merits or demerits. But we need a late market-peach of the yellow or red class.

Late Serrate. — Under this name, I have fruited for several years a white freestone peach of good flavor, but somewhat acid, and only medium in size. Its season ends about Oct. 15. This reaches, perhaps, as late as it is practicable to ripen peaches in this latitude. I have once known this variety to be frost-bitten on the trees whilst yet hard, and cannot say that it improved the flavor.

The four most approved varieties for market-peaches with us are Troth's Early, Large Early York, Oldmixon Free, and Smock. These can hardly be thrown out from any list, so satisfactory are they in vigor of tree, hardiness of buds, and productiveness of fruit.

The following list I would recommend as desirable in Southern Illinois :—

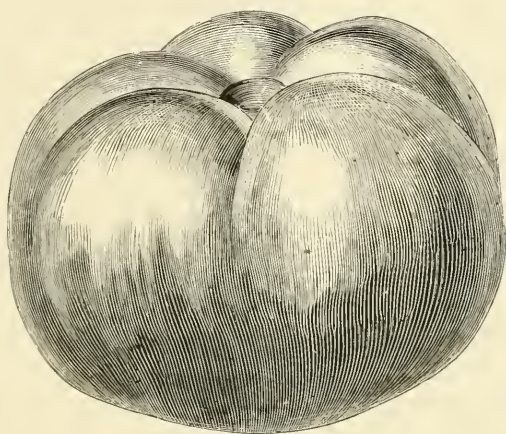
1. Hale's Early. 2. Troth's Early. 3. Large Early York. 4. Morris's Red Rarripe ; Crawford's Early. 5. Yellow Rarripe. 6. Oldmixon Free. 7. Reeve's Favorite. 8. Stump the World ; Columbia. 9. Late Rarripe ; Crawford's Late. 10. Ward's Late Free. 11. Smock ; Delaware White. 12. Heath Cling.

W. C. Flagg.

THE EUREKA TOMATO,

INTRODUCED last season, originated with Mr. Jonathan Periam, of the Tremont Gardens, Chicago, Ill., where it is extensively cultivated, and considered a valuable variety.

The plant is a dwarf, upright, robust grower, very distinct in its character, and resembles in foliage, and habit of growth, the French tree, Tomato de Laye, to which it appears to be closely related, although it must certainly be considered a decided improvement on that variety.



The fruit is medium-sized, smooth, roundish, and of a pale-red color, growing in clusters, generally solid, except perhaps late in the season, when I found many specimens which were hollow, and not inclined to be well filled and as solid as those produced during the earlier part of the season.

Although this variety may be considered too small to be profitably grown as a market sort, yet the dwarf, stocky habit of the plant, together with the beautiful appearance it presents when loaded with its numerous clusters of ripe fruit, will make it a favorite with those who wish to combine the ornamental with the useful.

C. N. B.

TERMINOLOGY OF THE VINE.

It were well, that, in our discussions and writings, we could all agree as to the precise meaning of the several terms by which we designate the different parts of a grape-vine. By so doing, and by adopting a few clear and well-defined expressions, we might be enabled to avoid much of the confusion that exists, and thus clear away the fog that beginners complain of as greatly obscuring the subject, which, indeed, is really very simple, and should be easily understood by the merest novice in grape-culture.

With a view to aid in so good a work, I shall endeavor to present to the readers of this Journal some terms that have been adopted by Dr. Mohr, a portion of whose writings has recently been presented to the American reader by Orange Judd & Co., as a translation by Dr. Seidhoff of Weehawken, N. J., under the simple title of "The Grape-Vine." This neat little book is recommended for its simplicity, and for the directness of its teachings: but it must not be expected that I should indorse all that it contains, because my observations of American vines have not enabled me to verify all the author's statements; although their correctness in regard to the foreign varieties is not called in question. The discrepancies only furnish further evidence that we must continue to make original observations upon the peculiarities and deportment of our own vines, and adopt a mode of trimming, training, and culture, thoroughly adapted to each of them, rather than to follow blindly the teachings of any foreign vine-dresser, how practical and learned soever he may be in regard to the habits and ways of those varieties with which he is familiar.

The definitions of Dr. Mohr are simple, and they strike me as well worthy of being generally adopted. These and perhaps some other expressions will be presented in this article, in hope of having them adopted by our people, so that we may all understand one another better. Let us now proceed to a consideration of the several parts of the vine.

The Shoot.—All the growth by extension made during one year is designated by this title during the period of its growth and perfection, from the time of its starting out of the bud until it has cast its foliage. Whether the growth bear fruits or leaves only; whether it start out from the old wood

in the spring, or from the buds of the new growth during the summer ; whether it come from the cane, the spur, or from the stock, — it is still a *shoot* until the end of the season. Shoots have several parts, — such as leaves, with buds in their axils, that may grow into *laterals* or lateral shoots ; tendrils opposite to the leaves, that may become bunches by a wonderful morphological change. Shoots have also nodes, or joints, and internodes between these.

The shoot is at first very easily separable from the older wood, and appears to be jointed to it ; but this character soon disappears with the growth and the deposition of wood-fibres that connect it firmly with the vine. The leaves appear on alternate sides of the shoot, and are arranged in the simplest order of phyllotaxy ; their attachment to the axis of growth is temporary and simple ; they are placed at the nodes ; they may be separated easily at a natural joint which connects them with the shoot ; and they fall spontaneously at the close of summer, leaving an eschar that marks their former point of junction.

Buds, or Eyes. — At the base of every leaf, a *bud* is formed ; and these organs follow the same law of arrangement as the leaves. The buds rest upon the upper side of the nodes, and are intimately connected with them. They become more or less developed during the season, in proportion to the health of the leaves, which are supposed to feed them ; and the co-relation existing between these organs is very intimate. Upon the full development of these buds will, in a great measure, depend the next year's growth and the productiveness of the vine. The excessive thrift of the vine, the accidental breaking of the end of the shoot, its being pinched off by the vine-dresser, or even its dependent position, will often cause the premature bursting of the buds during the first summer of their formation : this causes the production of

Laterals. — These are, therefore, only side-shoots. This expression should be confined to the first season of growth, and is applicable only until the fall of the leaf. So soon as a lateral is produced, the germs of another bud begin to develop at its base. The relative position of these organs is subject to a peculiar and definite arrangement : thus, in a series of two or more laterals, the newly-developed or second bud will be found alternately to the right and to the left of the laterals through the series. The laterals,

like the shoots from which they spring, are at first easily separated from them by a very slight effort, and they seem to have a joint at their origin ; but they become firmly united by woody fibres in the course of their growth. Laterals have the same appendages as the shoots, and their buds are often fruitful : indeed, in some varieties, they will produce better fruit and larger bunches than the buds of the original shoot.

Tendrils. — Opposite to the leaves, but not of every leaf, on the other side of the node, an organ of peculiar character is found, which is called *the tendril*. This seems to be simply furnished as a means of support to the shoot. The tendril is often branched, generally in twos, or bifid. They are round, and at first straight, stretching out to their utmost extent, as though seeking some object of support : so soon as this is reached, they intwine closely around it, forming a well-defined spiral, which clings with great tenacity. Many vine-dressers recommend the early removal of the tendrils when they are soft and green and may be easily pinched from the shoot. This may be useful to prevent the entanglement they sometimes produce among the shoots ; but they are the natural and the best supporters of the vine. They are intimately connected with the shoot by the deposit of woody fibres, which unite them very firmly and persistently. In the fruitful vine, the tendril undergoes a very curious morphological change, by which, owing to the development of many branchlets, each terminating in a germ, we have the production of the

Cluster, or Bunch. — Strange as it may at first sight appear, the barren tendril, useful only for support, and the fruitful bunch, are, at bottom, one and the same organ. That such is really the case may be known by their corresponding position on the shoot, — opposite to the leaves, and, in some varieties, bearing a definite arrangement in relation to these organs. Many tendrils have one of their arms partially transformed into a cluster bearing but a few berries : on the other hand, many bunches have attached to them a portion of tendril that has not undergone any change. Like the tendril, the bunch is firmly attached to the shoot by woody fibres, and may remain for a long time in this connection without separating naturally from it ; but, unlike the tendril, it does have a joint at some distance from its origin, at which point it may easily be separated from the vine. The number of bunches that may be formed upon any shoot, and the size they may

attain, depend partly upon the vigor of the plant, but is frequently characteristic of the variety. The development of bunches is chiefly confined to the shoots springing from well-developed buds that were formed the preceding year ; though they sometimes appear upon shoots that spring from old wood, in which case they are believed to be produced from buds that have lain dormant. The bunch is made up of *berries* that are supported upon short branchlets called *pedicels* : they are the fruit, and generally contain the seed. But many grapes are destitute of these organs of reproduction, as is illustrated in the so-called currants of commerce, which are really raisins without seed.

The arrangement of tendrils and bunches which Dr. Mohr describes as normal in the European vine does not hold with most American species. In the former, he says that only two are to be found in consecutive order, opposite to as many leaves ; after which occurs a joint without either bunch or tendril : whereas in our natives we often find four bunches consecutively ; and I have counted on the shoots of young vines as many as twenty-three tendrils opposite to the same number of leaves, without a single interruption. It has been suggested that the number of tendrils on a young seedling-vine may possibly be an index of the future fruitfulness of the variety in its adult state : this needs verification.

Nodes. — *Internodes.* — All who have given the least attention to the structure of the vine must have observed in the shoots and canes that these parts were marked by subdivisions. At each leaf there is an enlargement, upon which rests the bud : this is called the joint, though it is not really a joint in the true sense of that word ; it is designated in botanical language the *node*. The portion of the vine situated between two contiguous nodes is called the *internode*, or *merithalle*. We have no English word for either of these terms, and prefer to use the former. Buds always grow at the nodes, — never elsewhere ; and roots are most freely emitted from this part, though they may start from any point of the internode.

Canes. — It has already been stated that the word “shoot” was applicable only during the season of growth, until the fall of the leaf. Shoots, therefore, can never be more than about six months old, because, at the expiration of this term, they become *canes*, and are characterized by their firm, compact, woody nature, and are covered with a single layer of bark. In

this condition they remain for one whole year, during which only they are called *canes*. The laterals on the shoots are now called *lateral canes* if these have not been removed in the pruning. Under the hand of the vigneron, the canes are generally shortened more or less in the operations of pruning: and thus we hear of long canes and short canes and *spurs*; which latter are sometimes decidedly short, being often reduced to one or two good buds.

In training, the canes are either bent into *bows*, forming an arc or circle; laid down as *arms*, more or less horizontally; trained in a *spiral* around the stake; tied vertically to the supports; or spread upon the trellis in an inclined or fan-shape. If pruned to *spurs*, they may be self-supporting in the distaff or in the short-spur system. In all cases, however, they are called *canes*; and from these canes proceed the shoots of the coming year, at the close of which the cane becomes a part of the *stem*, or old wood, which is characterized with more bark, that assumes a darker tint; and in most species the outer layer hangs loosely, and is easily removed from the stem.

In conclusion, let us rapidly repeat these terms, which may be commended for their simplicity, and will prove of great use in explaining the subject of vine-culture, if they be generally adopted.

The Stock is the main stem of the vine.

The Stem includes all portions that are more than two summers old.

The Cane is the young or bearing wood when from six months to eighteen months of age. If short, it is a *Spur*.

Lateral Canes are the lateral shoots in their second year.

Shoots are the growth of the current year until the fall of the leaf.

Laterals spring only from the buds of shoots.

Nodes are the joints, or breaks, in the shoots and canes.

Internodes are the spaces between the nodes: both these disappear in the stem.

Buds, or *Eyes*, occur only at the nodes and in the axils of the leaves: they are arranged alternately, and often produce laterals; in which case new buds are produced at their base. Buds on canes furnish the next crop of shoots and their fruit. Buds may remain dormant for a long while, and at length spring from the stem at any point where a node had originally existed.

Leaves are arranged alternately at each node.

Tendrils are situated opposite to the leaves: they are sometimes wanting. They are branched in twos, and are permanent, though soon losing their vitality.

Bunches, or *Clusters*, are transformed tendrils, which become many-branched.

Pedicels are the ultimate subdivisions supporting the fruit.

Berries are the fruit; they vary in size, shape, and consistence: and, according to this last character, grapes may be divided into those having *flesh*, *pulp*, or *juice*: the former is not found in any American variety.

Seeds are the germs of future plants: the normal number is four; but many of the best varieties have fewer, and some are seedless.

Warder.

MANURE AND THE FLOWER-GARDEN.

THE question of manure is a fundamental one with all cultivators; and their success depends, in a good degree, on the manner in which they solve it. Many amateurs buy stable-manure, and apply it to every thing. To this there are two objections: first, the article is now-a-days expensive; and, secondly, it is unsuitable to the great majority of flowering-plants. Roses, indeed, being of a ravenous nature, thrive on it; and it is well to apply it in the autumn, as a mulch, about the roots of shrubs or trees of which we wish to stimulate the growth. Even in these cases, it should always be well decayed. But, for general use in the flower-garden, composts are far better, as well as far cheaper; and every country place may easily have within itself the means, more or less abundant, of preparing them.

The resources for the supply of raw material are never far distant. Weeds, potato-tops, squash, pea, and tomato vines, refuse cabbage-leaves, and the fallen leaves of autumn, may all be turned to excellent account; and instead of being burned, as they often are, should be thrown together in a heap for future use. Indeed, if you are fortunate enough to have a supply of leaves within reach, you need ask for little more. The scrapings of

a well-travelled road are also excellent, and may often be had for the asking. In some localities, peat or meadow-muck is very cheap, and is one of the best possible materials. Collect all these as occasion offers ; and if you throw on the pile wood-ashes, or even the ashes of soft coal, it will be the better. But you need a chemist to prepare them ; and fortunately he is easily to be found.

A single hog is capable, in the course of one summer, of converting ten cords of the materials mentioned above into good compost ; and, if you add to the rest the litter of the stable, the manure will be excellent. Every day, a quantity should be thrown into his pen, — say from three to five barrow-loads. These he can be taught to mix with great thoroughness, by throwing in a handful of corn, and covering it with the last barrow-load. This will cause him to work all day, turning up the mass in every direction in search of the hidden treasure. In dry weather, a few pailfuls of water, or soap-suds if at hand, should be added to assist decomposition.

This work of throwing in the material should be the special task of one man or boy, who should be required to accomplish it at a fixed hour every morning. It soon becomes a routine, and gives no trouble beyond that belonging to all farm or garden work, which never prospers without the eye of the master. When the hog-pen becomes too full, the contents must be thrown out, and the process repeated. Thus your whole mass of material is gradually broken up, incorporated, and enriched by the indefatigable quadruped, who, as a reward for his services, is destined to receive nothing but the butcher's knife at the close of the season ; thereby adding another item to the profits of his thankless proprietor.

I have used this process for a number of years, gaining a pile of manure valued at from fifty to sixty dollars at an expense of about six dollars for muck, eight for hauling leaves, and four for road-scrapings. The litter of one horse in the stable is thrown in daily ; and the labor expended is that of a boy for half an hour every morning, and occasionally of a man to empty the pen and turn the pile. The quality of the manure is better for my purposes than that of any which can be bought in the neighborhood. The leaves are first used extensively for covering plants in winter, and are procured as much for this purpose as for the other. *Francis Parkman.*

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To the Editor of "The American Journal of Horticulture and Florist's Companion."

Sir, — I had an opportunity of witnessing at Paris, in October last, an exhibition of fruits, flowers, and vegetables, that seemed to me to be so remarkable, that I feel that I cannot do better, as a subject for a letter, than attempt to give you some account of it. This exhibition was given in connection with the International Exposition at the reserved garden in the Champs de Mars, in some of the glass structures erected there, occupying several of them for its purposes. It was remarkable for its extent, for the quality of the articles exhibited, and for the great number of varieties of them that were shown ; so remarkable, that I do not believe an exhibition like this ever before occurred, or that this could be repeated anywhere but in France, and probably nowhere but in Paris or its vicinity. With the exception of one or two from Belgium, all the contributors were, I believe, French ; and, with this exception, all the articles the growth and produce of France. I wish it were in my power to give you a somewhat detailed account of this exhibition ; but, to enable myself to do this, it would have been necessary for me to have devoted to it more labor than I was inclined to do, and more time than I had at my disposal. It was so large, — the fruit alone filling at least five of the glass structures (some of them very large) above alluded to, the flowers and plants an equal number, and the vegetables as many more, — that, although I devoted the whole of one day to it, I could do no more than give a partial examination to a part of the fruit and a portion of the flowers ; contenting myself with a glance at the residue, and at some of the plants and vegetables, many of which I did not see at all. This exhibition was very well arranged for the convenience of its spectators ; for, being divided among several houses, this prevented a throng in any one, that, had it been held in one (could such sufficiently

large have been procured), would probably have prevented a considerable portion of it from being seen by any ; and, the houses being mostly of glass, ample light was afforded for viewing it distinctly. The general arrangement was like similar exhibitions that I have witnessed in the United States ; and it seemed to be conducted in very much the same manner as is there usual. Most of the articles were displayed upon tables or shelves ; the fruit in dishes of from half a dozen to a dozen specimens of each kind. The exhibition of fruits was mainly of grapes, pears, and apples, with a few peaches and plums.

The show of grapes was very large in quantity and number of varieties, and exceedingly fine. Partly by actual count, and partly by estimate made very carefully, I am confident that I am within bounds in stating that there were considerably more than a thousand dishes of this fruit upon the tables, besides a great many branches loaded with fruit, that were hung up on the sides of the building where the display was, for the purpose, as I supposed, of exhibiting the bearing properties of the variety so shown. The grapes were of both the white and purple varieties, the latter largely predominating. It was not, of course, to be presumed that from vines grown, as I suppose these were, in the open air, specimens could be selected where either the bunches or berries would be as large and fine as from vines carefully cultivated in grape-houses, not seldom with a view of exhibition, as could not here have been the case ; yet the bunches and berries in this exhibition of some few of the varieties that I thought that I recognized, as the Black Hamburg for instance, were of good size, and all seemed ripe and well colored. This exhibition of grapes very far exceeded any that I had ever before seen, or even imagined, in extent, quality, and variety ; and seemed to me to be highly creditable to the growers of them.

Pears were shown in great profusion, and seemingly in endless variety. From such notice as I could bestow, it appeared to me that every variety whose name is borne on the nursery-men's catalogues must have been here present by its representative. The exhibition of this fruit as here made seemed to me to be exceedingly good. So far as I observed, there were no poor or indifferent specimens on the tables ; but all were smooth, fair, and handsome : but at the same time I thought, that, of some varieties, I had before seen specimens that were larger or more overgrown than any here exhibited, though here sufficiently large to satisfy any reasonable expectation ; the uniform excellence of the specimens being that which largely contributed to the superiority of the exhibition. I should have liked, if it had been in my power, to have gone carefully over this show of pears, with a view to making a comparison of such of the varieties as I knew with my recollections of the same varieties as I had seen them in the United States ; and thus, perhaps, arrive at more correct conclusions with respect to the comparative merits of some kinds when grown in France or the United States. But this, from the extent of the exhibition, was entirely out of the question. Among the specimens that struck me as particularly fine were those of the following varieties ; viz., Buerré Six, Prince Impérial, Soldat, Laboreur, Conseiller de la Cour, Docteur Lentier, Josephine de Malines, Prince Camille, Clemence, Emile d'Heyst, and others that it seems unnecessary to name, being in a collection of fifty varieties that received the award of a first

prize. Among others that I noticed as fine were specimens of St. Vincent de Paul, Belle de Septembre, Belle de Fouquet, Grand Soleil, Buerré Superfin, Buerré Hardy, Doyenné Jamain, Prince Albert, Lieut. Portevin, Nouvelle Fulvie Marie Jallais, Fondante du Bois or Flemish Beauty, Buerré Merode, and Buerré Lucon. The largest pears that I observed were of the Belle Angevine variety. The specimens of Beurré Diel, Duchesse, Marie Louise, Clairgeau, and De Tongres, although good, were hardly equal to some that I had before seen in the United States; while those of the American varieties—the Swan's Orange and Seckel—were much inferior to some of each that I had before seen. Among the principal contributors of fruit were the following, whose names are well known to American cultivators,—M. André Leroy of Angus, who showed five hundred and sixty varieties of apples and pears, principally of pears; MM. Jamin and Durant of Bourg le Reine, and M. Duprey Jamain of Paris, who both had large collections of fine specimens. One exhibiter from Belgium showed four hundred and sixty-eight varieties of pears, including sixty-four different seedlings of his own raising, a single specimen of each variety.

But the part of this exhibition that struck me with most surprise was the show of apples, that much exceeded any thing of the kind that I had supposed possible in Europe. They were here exhibited in large quantity and very great variety: the specimens were generally very fine, and well grown; many very large, smooth, fair, and of great beauty. I have before seen large and fine collections of apples exhibited in America; but I have never seen a show of them, that for the number of varieties, and the beauty and excellence of the specimens, would compare with this. As I am not fond of apples, and but seldom eat them, I am not, perhaps, fitted to judge of the quality of this fruit as grown in France; but, so far as I have tasted them, it appears to me that apples grown in France compare very favorably with those generally raised in Massachusetts.

Upon the tables were some plums of Coe's Golden Drop, and of a few other late varieties; and a few dishes of very large, and, in appearance, very magnificent peaches. It was too late in the season for a large display of these fruits.

The show of flowers was composed of plants in pots, and of cut-flowers: among the latter, the most noticeable were roses, gladioli, double zinnias, petunias, and dahlias. Of the plants in pots I can say but little. I made but little examination of them. There was a large quantity, although but few were in flower; and I can now only recollect some air-plants, whose flowers, from their singular forms or their delicate hues and marking, attracted attention.

There was a great display of cut roses, arranged in long rows: these were of all colors, although red from light pink to dark crimson was the prevailing hue. As I walked down the long file, I noticed many that were large, of fine form, and very double. I particularly noticed a large double yellow rose, marked Marshal Neil, that was very conspicuous; besides many fine blooms that were very beautiful, but which I cannot now designate by their names.

There was a large show of petunias of different colors; besides those of one color, many that were variegated. Some of the kinds exhibited were entirely new.

The double zinnias were very remarkable. They were of different colors,

very large and very double, as large and as double apparently as a medium-sized dahlia. I happened to see double zinnias before in Europe when they were first produced, and have subsequently seen those in America that were considered fine ; but these were very far superior to any that I have ever before seen.

The dahlias made a beautiful show. Although there were a good many of these flowers, they would not, perhaps, be considered as very numerous in proportion to the extent of the exhibition. But, if there was a deficiency in the quantity, there was none in the quality, of the flowers : these seemed to me as near perfection as possible. They were of all colors, from pure white to the darkest crimson ; and, besides selfs, there were some tipped, striped, or variegated : they were very double, of perfect form, with no depression in the centre, but a complete circle, making a magnificent show. A pure white, a light yellow, and a bright scarlet, struck me as especially beautiful even where all were fine.

But the flowers that at this show most excited my admiration, were, I think, the gladioli. They were very numerous, entirely filling a good-sized house ; and, the bottles in which the flower-stalks were inserted being sunk in the ground up to their neck, the flowers appeared as if growing in a bed. They were of every hue, and shade of color, that the gladioli ever assumes ; and many were distinguished by the most beautiful and delicate marks or pencillings, that in the bright sunshine made a most gorgeous show. Many of the flowers were new, blossoming for the first time the past season. Until I saw them on this occasion, I had no idea of the number of the different varieties of this flower. I can remember when the introduction into our gardens of the *G. Psittacina* — a variety that would not now, I suppose, be admitted into any good collection — made quite a sensation ; but I was not aware, until I saw it here, of the very great improvement that had been made since then in this flower.

The vegetables were very fine, and in great abundance ; but I was unable to give to them more than a very slight and imperfect examination : indeed, it was only a portion of them that I saw at all. One part of them that I did see was a house completely filled with specimens of different varieties of the potato, shown in dishes, five or six specimens of each to a dish. I do not imagine that there were as many varieties as dishes, but, on the contrary, suppose that many were duplicates or triplicates of others. Yet, making all allowance, I find that the number of varieties of this vegetable is vastly greater than I had supposed it to be.

This show lasted several days ; indeed, until the decay of the fruit and some other of the articles exhibited brought to a termination the largest exhibition of this kind, that, as I think and believe, has ever been made.

JAN. 30, 1868.

Joseph S. Cabot.

POTATO-GROWING IN MAINE. — The State of Maine is one of the largest potato-producing States in the Union ; many hundred thousand bushels being raised annually, and exported to Western and Southern markets. The greatest potato-shipping *dépôts* in the State are Bangor, Portland, and Belfast ; and, during their season, vessels are loaded and sail daily, bound to ports all along-shore from Boston to New Orleans. The average price in this market, Belfast, has

been one dollar a bushel to the producers during the winter ; though at times they have risen as high as a dollar and twenty cents.

The variety almost wholly grown here for market and transportation is the Orono, or, as it is locally termed, the "Foote" potato. When they arrive in market, and are sold, they are quoted "Jackson Whites ;" but the fact is, of the many thousand bushels of potatoes which are sent out of this market annually, not five hundred bushels are Jacksons. The reason why the Oronos are raised in preference to the Jacksons is that they are more productive, and command the same price in market. In general appearance, the two resemble each other. The Jackson is of the better quality, especially if grown in a wet season. It is also a little earlier, and, as before stated, not so productive. The Orono is said to have originated in the town of Orono, in Penobscot County, in Maine ; while the Jackson originated in a town of that name in our own county. So you see they are both local varieties, though they have obtained a wide-spread significance.

The potato-crop in Maine last year was light, being at least one-third less than an average. The cause of this falling-off was a wet, late spring, and an early rust, which killed the tops while the tubers were about two-thirds grown. The average yield in this State is about a hundred and fifty bushels per acre ; but last season it was not a hundred. The average price is about fifty cents a bushel in this market ; but this year it is double that sum, so that the farmer who raised more than required for consumption gets about as much money as though there was a full crop.

The method of cultivation pursued here differs somewhat with different farmers. A common method is to break up an old sward in the fall or spring, harrow, furrow, drop a shovelful of barnyard manure in hills two feet apart, and plant the potatoes upon it. They are hoed once, and no other care given till harvesting. Others plant on old ground in the same manner. Others, again, use ground plaster in addition to the manure ; and a good many raise large crops with only plaster, or sulphate of lime, as a dressing. The method of applying the plaster is to first mix it with the seed as the potatoes are cut : this stops their bleeding, and some of the plaster adheres to the cut potato. The seed is then dropped without manure, and a tablespoonful of plaster put on it before covering. After the sprouts have just broken through the soil, and the first leaves are formed, another spoonful of plaster is applied ; and this is all the manuring the crop obtains. Fine crops of potatoes are obtained by this method : though the system is not one to be recommended ; for the soil must be left much poorer from each crop taken off.

In their cultivation, the horse-hoe and cultivator are extensively used ; and, in many cases, the hand-hoe is not used either in planting or hoeing. A man and boy with a cultivator will plant and cultivate as many acres as ten men with the hand-hoe. No machine for digging has yet come into general use. They are dug by hand, sorted in the field, put into the cellar, and marketed during the winter season.

Geo. E. B.

CUCUMBERS. — We believe we shall be doing our readers a favor to continue our extracts from Burr's admirable work on vegetables.

The cucumber is a tender, annual plant ; and is a native of the East Indies, or of tropical origin. It has an angular, creeping stem ; large, somewhat heart-shaped, leaves ; and axillary staminate or pistillate flowers. The fruit is cylindrical, generally elongated, often somewhat angular, smooth, or with scattering black or white spines ; the flesh is white or greenish-white, and is divided at the centre of the fruit into three parts, in each of which the seeds are produced in great abundance. These seeds are of an elliptical or oval form, much flattened, and of a pale yellowish-white color. About twelve hundred are contained in an ounce, and they retain their vitality ten years.

Soil and Culture. — Cucumbers succeed decidedly best in warm, moist, rich, loamy ground. The essentials to their growth are heat and a fair proportion of moisture. They should not be planted or set in the open air until there is a prospect of continued warm and pleasant weather ; as, when planted early, not only are the seeds liable to decay in the ground, but the young plants are frequently cut off by frost. The hills should be five or six feet apart in each direction. Make them fifteen or eighteen inches in diameter, and a foot in depth ; fill them three-fourths full of thoroughly-digested compost, and then draw four or five inches of earth over the whole, raising the hill a little above the level of the ground ; plant fifteen or twenty seeds in each, cover half an inch deep, and press the earth smoothly over with the back of the hoe. When all danger from bugs and worms is past, thin out the plants, leaving but three or four from the strongest or healthiest to a hill.

Taking the Crop. — As fast as the cucumbers attain a suitable size, they should be plucked, whether required for use or not. The imperfectly formed, as well as the symmetrical, should all be removed. Fruit, however inferior, left to ripen on the vines, soon destroys their productiveness.

Seed. — As cucumbers readily intermix or hybridize when grown together, it is necessary, in order to retain any variety in its purity, to grow it apart from all other sorts. When a few seeds are desired for the vegetable-garden, two or three of the finest-formed cucumbers should be selected early in the season, and allowed to ripen on the plants. In September, or when fully ripe, cut them open, take out the seeds, and allow them to stand a day or two, or until the pulp attached to them begins to separate ; when they should be washed clean, thoroughly dried, and packed away for future use.

For Pickling. — The land for raising cucumbers for pickling may be either swarded or stubble ; but it must be in good condition, and such as is not easily affected by drought. It should be deeply ploughed, and the surface afterwards made fine and friable by being thoroughly harrowed. The hills should be six feet apart, and are generally formed by furrowing the land at this distance in each direction. Manure the hills with well-digested compost, level off, draw over a little fine earth, and the land is ready for planting. This may be done at any time from the middle of June to the first week in July. The quantity of seed allowed to an acre varies from three-fourths of a pound upwards. In most cases, growers seed very liberally, to provide against the depredation of worms

and bugs ; usually putting six or eight times as many seeds in a hill as will be really required for the crop. When the plants are well established and beyond danger, the field is examined, and the hills thinned to three or four plants, or, where there is a deficiency of plants, replanted. As fast as the cucumbers attain the proper size, they should be plucked ; the usual practice being to go over the plantation daily. In gathering, all the fruit should be removed. — the misshapen and unmarketable as well as those which are well formed ; for, when any portion of the crop is allowed to remain and ripen, the plants become much less productive. In favorable seasons, and under a high state of cultivation, a hundred and twenty-five thousand are obtained from an acre ; while, under opposite conditions, the crop may not exceed fifty thousand. The average price is about a dollar and twenty-five cents per thousand.

Varieties. — *Early Cluster* ; *Early Green Cluster*. — A popular early cucumber, producing its fruit in clusters, near the root of the plant ; whence the name. The plant is healthy, hardy, and vigorous ; fruit comparatively short and thick. Its usual length is about five inches, and its diameter about two inches ; skin



prickly, green ; at the blossom-end often paler, or nearly white ; brownish-yellow when ripe ; flesh white, seedy, tender, and well flavored, but less crispy or brittle than that of many other varieties. It is a good early garden sort, and is quite productive ; but is not well adapted for pickling, on account of the soft and seedy character of its flesh.

Early Russian. — This comparatively new variety resembles, in some respects, the *Early Cluster*. Fruit from three to four inches in length, an inch and a half or two inches in diameter, and generally produced in pairs ; flesh tender, crisp, and well flavored. When ripe, the fruit is deep yellow or yellowish-brown. Its merits are its hardiness, extreme earliness, and great productiveness. It comes into use nearly ten days in advance of the *Early Cluster*, and is the earliest garden variety now cultivated. Its small size is, however, considered an objection ; and some of the larger kinds are generally preferred for the main crop.

Early Frame ; *Short Green*. — One of the oldest of the garden sorts, justly styled a standard variety. Plant healthy and vigorous, six to ten feet in length ; fruit straight and well formed, five inches and a half long, and two inches and a half in diameter ; skin deep green, paler at the blossom-end, changing to clear

yellow as it approaches maturity, and, when fully ripe, of a yellowish, russet-brown color; flesh greenish-white, rather seedy, but tender, and of an agreeable flavor. It is a few days later than the Early Cluster. The variety is universally



popular, and is found in almost every vegetable garden. It is also very productive; succeeds well, whether grown in open culture or under glass; and, if plucked while young and small, makes an excellent pickle.

London Long Green.—Fruit about a foot in length, tapering towards the extremities; skin very deep green while the fruit is young, yellow when it is ripe; flesh greenish-white, firm, and crisp; flavor good. This variety is nearly related to the numerous prize sorts which in England are cultivated under glass, and forced during the winter. There is little permanency in the slight variations of character by which they are distinguished; and old varieties are constantly being dropped from the catalogues, and others, with different names, substituted. Amongst the most prominent of these sub-varieties are the following:—

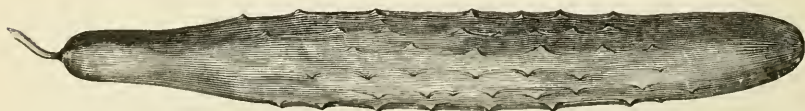
Carter's Champion.—Recently introduced. Represented as one of the largest and finest of the forcing varieties.

Coleshill.—A recent sort, measuring, on the average, about twenty inches in length. With the exception of the neck, which is short and handsome, the fruit is perfectly cylindrical. The skin is smooth, pale green, and thickly covered with bloom; hardy, productive, and of excellent quality.

Conqueror of the West.—Eighteen to twenty inches in length. It is a fine prize sort, and succeeds well in open culture.

Cuthill's Black Spine.—Six to nine inches in length, hardy, early, and productive. An excellent sort for starting in a hot-bed. Fruit very firm and attractive.

The Doctor.—Sixteen to eighteen inches in length, and contracted towards



the stem in the form of a neck. In favorable seasons, it will attain a good size if grown in the open ground. Crisp, tender, and well flavored.

White-spined.—This very distinct variety is extensively grown for marketing, both at the North and South. The plants grow from six to ten feet in length;

and, like those of the Early Frame, are of a healthy, luxurious habit. The fruit is of full medium size, straight, and well formed; about six inches in length, and two inches and a half in diameter. Skin deep-green; prickles white; flesh white, tender, crispy, and of remarkably fine flavor. As the fruit ripens, the skin gradually becomes paler; and, when fully ripe, is nearly white, by which peculiarity, in connection with its white spines, the variety is always readily distinguishable. The White-spined is one of the best sorts for the table, and is



greatly prized by market-men on account of its color, which is never changed to yellow, though kept long after being plucked. It is generally thought to retain its freshness longer than any other variety; consequently to be well fitted for transporting long distances; though, on account of its peculiar color, the freshness may be less real than apparent. For the very general dissemination of this variety, the public are, in a great degree, indebted to the late Isaac Rand, Esq., of Boston, whose integrity as a merchant, and whose skill as a practical vegetable cultivator and horticulturist, will be long remembered.

Eggleston's Conqueror. — "Very prolific, good for forcing, of fine flavor, hardy, and a really useful sort. Specimens have been grown measuring twenty-eight inches in length, nine inches and a half in circumference, and weighing five pounds."

Flanigan's Prize. — An old established variety, having been grown in England upwards of thirty years. Length fifteen inches.

Giant of Arnstadt. — Length twenty-four inches; fine rich color, and productive.

Henderson's Number One Black-spined. — Length seventeen inches, straight and even; color deep and fine. Of a hundred and eighteen varieties fruited at the Chiswick Gardens, England, this proved one of the best.

Hunter's Prolific. — Length eighteen inches. Very crisp, and excellent, but requires more heat than most other varieties. Spines white; fruit covered with a good bloom, and not liable to turn yellow at the base.

Improved Sion House. — This variety has received many prizes in England. Not only is it well adapted for the summer crop, but it succeeds remarkably well when grown under glass.

Irishman. — Length twenty-two to twenty-five inches. Handsome, and excellent for exhibition.

Lord Kenyon's Favorite. — Length twelve to eighteen inches. A fine sort for winter forcing.

Manchester Prize. — This, like the Nepal, is one of the largest of the English greenhouse-prize varieties. It sometimes measures two feet in length, and weighs twelve pounds. In favorable seasons, it will attain a large size in open culture, and sometimes perfect its seed.

Long Green Prickly. — This is a large-sized variety, and somewhat later than the White-spined. The plant is a strong grower, and the foliage of a deep-green color; the fruit is about seven inches in length, straight, and generally angular; skin dark green, changing to yellow as the fruit approaches maturity; when fully ripe, it is reddish-brown, and is often reticulated about the insertion of the stem; prickles black; flesh white, somewhat seedy, but crisp, tender, and well flavored. The Long Green Prickly is hardy and productive; makes a good pickle if plucked while young; and is well deserving of cultivation. It differs from the London Long Green and the Long Green Turkey in its form, which is much thicker in proportion to its length; and also in the character of its flesh, which is more pulpy and seedy.

DATURA ARBOREA. — A bed of tree daturas well repays the trouble of cultivation. They require to be planted out in May; and during summer should have their leaves syringed constantly, and plenty of water and liquid manure given them two or three times a week. On large plants, hundreds of flowers open at once. The single ones yield two displays of flowers yearly; but the double, with fewer flowers at a time, are in constant bloom during the summer. The plants, when taken up and housed for the winter, are got up with as much earth as possible, placed on a narrow border behind the stage of the greenhouse, and their roots covered with leaf-mould, both leaves and roots being kept well moistened. They lose part of their leaves, and die back a little, but easily recover in spring.

The perfume of the flowers is very powerful, and causes giddiness and headache if in a confined room. We have known persons to be seriously affected from only smelling the blossoms. The fragrance is pleasant, although overpowering: it probably partakes somewhat of the poisonous properties of the family. However, there is no real danger; and the plants are ornamental enough to be extensively grown. They are also known as Brugmansias.

WE extract the following from the Report of the Garden Committee of the Massachusetts Horticultural Society, written by H. W. Fuller; and commend it to the attention of all our readers: —

"Economy and comfort often go together. The true principles of art can sometimes produce striking effects at half the expense bestowed by ignorance. We often see men planting *hundreds* of trees to destroy the breadth and beauty of a landscape, where a few clusters would have accomplished vastly more effect.

"It is one of the advantages conferred by this society, that, by diffusing

knowledge, the common people are enabled, at little expense, to have a cheerful spot of sunshine and color, or shade and refinement, of their own creation, from a few trees or shrubs, or selections from the world of flowers. Our cities, when they spread out their gardens for inspection, are cultivating and developing the tastes and improving the aspirations of the people. The progress of civilization and art in a country tends directly to the love and study of Nature; and the study and love of Nature, in turn, improves art and morals. Whoever loves Nature must be led to adore its Author. Whoever watches the opening and painting of a bud, and sees how true to time and law is all growth, cannot believe that *blind chance* controls it. Whoever contributes to our innocent pleasures adds to the sum of human happiness, and becomes a benefactor. Every one who helps to advance the knowledge and taste of the masses helps to keep them pleasantly and innocently occupied, and diverts them from dangerous ways. They can thus be made to *observe* more closely, and find satisfaction in the very wilds about them. Even the lichens and the fungi become vehicles of pleasure. Money devoted to ornamenting the landscape is not lost. Let the environs of a city be made as beautiful as possible; let the drives be as charming to the eye as they are easy to the carriage; let wealth be spread out in green and grounds to cheer the heart of the stranger: it will, ere long, bring him back again, and bring friends with him in time to share that wealth thus opened to his view. The trader from afar will carry home something more than the merchandise he has bought; and, when he wishes to buy again, the thought of business will be mingled with a sensation of pleasure. A love of Nature is the elixir of life; for *he* lives longest who gets the most of life."

INFLUENCE OF THE GRAFT UPON THE ROOTS. — A valued correspondent on the Rock River, in Northern Illinois, makes the following query and statement: —

"Have you ever observed the effect of the *graft* on the *roots* of the *stock*? You may root-graft, for instance, the *Yellow Bellflower* on roots of seedling stocks, taking them at random just as they come; and you may graft the *Fall Pippin* on a portion of the same stocks, and cultivate the young plants in the same manner. When you come to take up the young trees at three years old, you will find all the Bellflowers furnished with a mass of fibrous roots; and all the Fall Pippins will have a few sturdy roots, and not many fibres upon them. Other varieties are provided with roots that are more or less characteristic of each."

Frequent reference has been made to the influence exerted by the stock upon the graft by writers and speakers at pomological gatherings; and it has been pretty generally agreed among the highest authorities that the influence in that direction was limited by a very narrow circle: but here is a new question, or a new aspect of the question. And yet it is not entirely new; for allusion to this class of facts has already been made by some authors, and facts similar to those mentioned by this querist must have been frequently noticed by every observant nursery-man when taking up trees for his customers. Indeed, there is as much character in the roots of trees as in their branches and foliage: and the root

characters are well worthy of our study; though, being concealed in the soil, they are not so patent to our observation.

When we consider that the woody fibre itself, even to the ramifications of the roots, is made up of the cells that connect the buds with the soil, we should expect that the latter would impress the former with their peculiar characters. If, from injury, pruning, or other cause, one side of a tree is less developed or less healthy and vigorous than another, we always find that side of the bole is less fully developed, and that the roots on that side are smaller than those connected with and related to the vigorous portion of the tree.

In the cases cited, the Fall Pippin has the more straggling form. Though of strong growth, it has fewer buds at a given age than the Yellow Bellflower, which is more twiggy, but is furnished with a greater number of leaves and buds. Of these latter organs, each being a distinct plant sending its radicle to the soil, we should expect to find a greater number of small roots in the Bellflower than in the Fall Pippin, even though the individual shoots and roots of the latter be coarser and larger.

The consideration of these root peculiarities in all our plants, and in different varieties, is commended to the readers of the Journal for their observation and study.

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ROGERS'S HYBRID, No. 4. — This grape is believed by many to be the best grape for New England; and it also stands high at the West, as far as tested. It is steadily gaining favor, and I consider it the best grape in my collection of thirty varieties. I had some bunches the last season that weighed a pound and a quarter, and a friend of mine had one bunch that weighed a pound and three-quarters. I think this grape must have improved from cuts that I have seen that were taken years ago. The bunches are now many of them double-shouldered, and are nearly as showy as the Black Hamburg. It is not quite as early as the Hartford Prolific; but it was ripe enough on my vines last season, at the time of the Hartford's ripening, to be a much better grape than that variety. It is the healthiest vine in both fruit and foliage that I have on my place. It is very hardy, — the most so of any of the hybrids that I have tested. It does not require covering any more than the Concord, though I am a firm believer in covering every fruit-vine in our climate that can be covered. Notwithstanding the persistent efforts of some to undervalue these hybrids, some of them are destined to be very popular; and I have yet to see the grape in our markets that will compete in quality or appearance with Rogers's No. 4. These hybrids will not bear the close pruning recommended by some. They are vigorous growers; and if cut back, as we read of in some of the books, they will push such a vigorous growth that the fruit will be found wanting: whereas, if the sap have to circulate through ten or fifteen feet of old cane, its course will be less rapid, and we shall get fine bunches of fruit. I am not a believer in the unmerciful close pruning. If we wish to kill the bushes in an old pasture, we persist in cutting for about three years as close as recommended by some for the grape, and we accomplish our object.

L. Bassett.

POTATOES. — The potato (*Solanum tuberosum*) ranks fourth among the edible vegetable productions of our country; wheat, corn, and oats, only, taking precedence in money value. Among the esculent roots, it stands at the head. By the census of 1860, the quantity raised in the United States was 110,571,201 bushels. Nearly nine-tenths of this quantity were grown in the free States. As the crop has greatly increased since the last census, we may safely estimate the amount now required for the wants of the country at 150,000,000 bushels. Most of this large amount is needed for table-use; as the price has ranged so high of late years, that the potato cannot profitably be converted into starch as formerly, nor used for fattening stock. As an article of food, it is the most acceptable of roots; and bread only can claim a more universal use. Like bread, it is farinaceous, free from marked taste, and is thus adapted to all palates, and suitable to be eaten with most other kinds of food. Its nutritious element is mainly starch; so that it is fitted to be an accompaniment of meat, rather than a substitute for it. The potato is a luxury to the rich, and a necessity to the poor. No table is complete without it, whether a king or a peasant is to be the guest. How our fathers lived without it is a mystery. An article of such value, and so universally used, demands the careful consideration of the horticulturist.

Its History. — The potato was first brought from South America to Spain about the middle of the sixteenth century, and was cultivated under the name of Papas. Sir Walter Raleigh first brought the root to England in 1586, and planted it on his estate near Cork. A century elapsed before the cultivation became general in England. It was at first raised only in botanic gardens as a curious exotic. In 1663, the Royal Society took some measures to encourage the growth of potatoes as an article of food, but met with indifferent success. In books of gardening published near the end of the seventeenth century, they are spoken of contemptuously as fit only for swine. Evelyn, writing in 1699, more than a century after their introduction into England, says, "Plant potatoes in your worst ground." "The Complete Gardener," published in 1719, makes no mention of potatoes. It was near the middle of the eighteenth century before their merits began to be generally appreciated. The county of Essex took the lead in their cultivation; and, in 1796, seventeen hundred acres in that county were planted with potatoes for the supply of the London market. This was considered, at the time, an immense tract to be devoted to this crop. During the present century, the cultivation of potatoes has extended with wonderful rapidity; but the demand has fully kept pace with the supply, and prices have steadily enhanced. We know no crop that pays better for the labor bestowed upon it, and none that more richly merits careful investigation.

We propose to discuss briefly, —

1st, The climate and soil best adapted to the potato.

2d, The best varieties.

3d, The different modes of cultivation.

4th, The potato-disease.

5th, The production of new varieties.

The potato is a native of South America, having its origin in the tropical table-lands of the Andes; and will doubtless flourish the best where the climate

and soil are most nearly allied to those of the original home. We must ever bear in mind, while selecting localities for the extensive cultivation of the potato, that it is a mountain tropical plant, and has a twofold sympathy, — first with the mountains, requiring coolness and moisture, suffering from extremes of heat and cold, moisture and drought; and, secondly, with the tropics, requiring, like corn, tomatoes, and other tropical plants, exemption from frosts, and a temperature as nearly uniform as possible. It requires, however, less heat than most of the vegetables which have their origin in the tropics. The length of the season is not of so much importance as the uniformity of the temperature, Nature having kindly provided different varieties, which mature, some in three months, and some in five; so that, with the selection of proper sorts, this esculent can be grown from Maine to Texas. Each variety has a fixed period of maturity, from which it does not vary any more than do the different varieties of corn. The climate best adapted for the potato is found in the mountainous districts of the warmer portions of the country, and in the vicinity of lakes or large bodies of water, the influence of which is to equalize the temperature, and furnish suitable moisture.

The soil best adapted to the potato is a rich, sandy loam. Clay soils are too impervious to light, air, and heat. In dry seasons, potatoes may flourish in clay-loam; but, ordinarily, clay surrounds the tuber too compactly, retains water too long, and causes decay even where there is no disease. Sandy and gravelly soils are not so objectionable as clay; but they vary in their temperature too readily to furnish the best bed for the growth of the potato. If the seed be planted deeply in sand, well enriched, and cultivated with large hills, or, better still, with a level surface, so as not to suffer from the sudden changes of the atmosphere, the yield is often large, and of excellent quality. Mucky soils, that are deeply drained and covered with sand, furnish some of our best potatoes. If not well drained, muck is as retentive of moisture as clay, and is unfit for the production of this esculent. Muck also radiates and absorbs heat rapidly. Sand remedies this defect; and there are few soils in which we should plant potatoes with more confidence than in muck well sanded. The effect is the same if the muck-bed is carted on to the sandy land. This is an expensive process; and therefore, in selecting a field for potatoes, we give a preference to loam in which sand predominates. In all cases where the subsoil is retentive of moisture, deep drainage is necessary. This not only gives the great advantage of early planting, and uniformity of temperature, but also uniformity of moisture; for it is well established that lands deeply drained suffer the least from drought. Not only do the roots penetrate to a greater depth in drained land, but the moisture rises by capillary attraction.

Virgin soil is much preferred by the potato to one that has long been cultivated. It is usually more light and porous, and abounds with the elements which the tubers need for luxuriant growth. If timbered land, and the brush and stumps have been burned, the ashes will furnish just the nutriment which the potatoes require; and large, healthy tubers may be confidently expected, whether the season is favorable or unfavorable. Next to a virgin soil ranks old pasture-land. The inverted sod of an old pasture makes a light bed in which potatoes love to lie. If the soil is not naturally rich, it may be necessary to put

some well-fermented compost in the hill to give the seed a good start while the sod is rotting. As most gardeners are confined to one locality, and cannot avail themselves either of a virgin or sod soil, it may be well to add, that leaf-mould from the forest will rejuvenate an old garden, and restore it to its original capacity for the production of potatoes and other roots. Muck from the swamp, and sods from the side of the road, will have a similar but not an equal effect. We hear much complaint of the failure of potatoes in old gardens. As a sure remedy for this failure, we recommend leaf-mould with as much confidence as Brandreth does his pills for a disordered stomach. In our next, we shall consider the different varieties of potatoes.

PLUM-TREE, CURCULIO, AND BLACK KNOT. — One of the most beautiful sights which meet the eye of the visitor to a well-kept garden of fruits is that of a properly trimmed and trained plum-tree, loaded with its golden or purple fruit. But, alas ! too often are one's cherished expectations doomed to disappointment through the ravages of the curculio and black knot. Yet it is possible to behold this beautiful sight by a little care and exertion. I speak knowingly, since it has been a labor of love with me for eight or ten years to cultivate this tree, and produce its fruit to gratify my eye and educate my taste. I therefore propose to give a few facts touching its cultivation, and production of fruit ; and, to do it so as to convey to the reader a practical knowledge of the method, I will relate my practice after the manner of a tutor. In the first place, secure a piece of ground with a good natural drainage or gravelly subsoil (but any soil may be suitably under-drained, for this is essential) ; secure thrifty one-year-old trees of single stem from bud, if possible from three to five feet high, which in spring, at time of planting, cut back to eighteen inches ; for it is an advantage to have the head low. This eighteen-inch trunk will throw out side-limbs : select three of the best on opposite sides, and rub off the rest ; thus you will commence the formation of the head. In the following spring, cut back (if a good growth has been made) two-thirds of this three-limb growth, leaving an outside bud on each limb : these, in turn, will throw out two or more thrifty shoots each ; if more, however, remove them. Then, again, head back as before, and continue to do this from year to year ; and in course of time you will have a vase-shaped tree, — a thing of beauty, — with nearly perpendicular main limbs, capable of supporting almost any weight. The process of cutting back to an inside or outside bud will either expand or contract the tree at pleasure. But, should the growth be a little rebellious, nothing is simpler than to practise the old adage, "Just as the twig is bent, the tree's inclined." I have thus produced a perfect model of a wine-glass. A few minor limbs may occasionally mar the general contour, which should be removed or shortened in from time to time as the tree develops. So much for trimming and training. And now a word as to its cultivation. In the first place, let me most strenuously urge, at no time and by no means permit those fell-destroyers, the plough and spade, to go tearing through the soil about your trees : they are all well enough in their proper place. Nothing but the hoe is required to keep down the weeds ; and an asparagus-fork, with prongs not over three inches in length, should ever be used about your trees, so as to

keep the top soil loose, that any application of manures may easily percolate to thousands of little mouths that lie just below the surface. Let all fertilizing applications be made to the top of the soil, and your fork used to gently mix it with the earth. You must not forget that the most intimate relation exists between the head and the roots: mutilate either, and you will injure the other. Plant shallow; for the roots require heat and the influence of the light, yet not directly in contact. Annually dress with well-rotted stable-manure, leached ashes, salt, lime, and plaster, or ground bones. The same practice will apply to the apple or pear tree. The best time for these applications is the fall: this is patent from the fact that the feeders take nothing but what is in a state of solution; and so, by the arrival of spring, chemical decomposition has performed much of the work of solution ready for the first hungry mouth set in motion by the genial warmth of spring. So much for cultivation. And now about the fruit-curculio and black knot. Your reward for faithful stewardship is near at hand. Longitudinal cuts in June, with a sharp knife, along the main limbs and trunk, just through the outer bark, and no deeper, will secure protection from the black knot, which is nothing but a fungoid growth produced by weakened tissues, brought about too often by injury to the roots. Still, with all our care, it may in some rare cases exhibit itself. Take advantage of its early formation by removing it with a sharp knife, and thus destroy its germs and further spread. When the tree arrives at bearing maturity, watch for the first indication of crescent marks upon your tender fruits. Rise at early dawn, spread sheets beneath your tree, and by a sudden jar dislodge his "Turkiship." You will find him resembling a dead bud. Remove him to some brimstone-pit or similar place of perdition. 'Tis your fault if he escapes. Thus continue until your plums are nearly full size. A small mallet with a thick rubber head, and a square of gutta percha laid upon the limb to strike upon, are all you require. At no time allow any fallen injured plums to lie upon the ground: gather them twice a day, and put in boiling water, and thus prevent a future crop of curculio; for the worm is matured in the fruit, falls to the ground, burrows, and again renews the existence of the curculio. All other remedies are species of quackery. Should your trees be overloaded with fruit as mine have been, do not neglect to remove, without injury to the spur, at least half of the crop. Now, I am aware that all this looks like considerable labor; but allow me to assure you from actual experience, that an hour's daily labor in the early morning, when the curculio is in a partially torpid state, during the growing season of the plum, will secure from its depredations a very great number of trees, and your reward will be great. One Columbia tree gave me three bushels of superb plums last season, a portion of which I could spare, and sold them at five dollars per bushel: therefore the profits of this single tree were fifteen dollars (Canada currency), the half of which alone paid all the expense of labor in taking care of a dozen trees. The labor was scarcely perceptible; and I must say that I was well repaid for my labor by the beautiful sight of loaded Columbias, Washingtons, Bradshaws, Duane's Purples, Jeffersons, Lawrence's Favorites, and Gages. It would require a strong temptation to draw me away from the delicious aroma of these golden, green, and

purple fruits. Drinking-saloons, political arena, "et hoc," hold forth no inducements for the genuine lover of the golden fruits,

"Which drop as gentle airs come by
Tha! fan the blue September sky."

I fear this article is getting tedious. Please let my acknowledged weakness for fine fruits be an excuse.

William H. Mills.

HAMILTON, ONTARIO.

SUMMER FLOWERS. — For every man's garden, the plants for satisfaction, continuous bloom, and ease of culture, are, after the rose, the perennial phlox, the gladiolus, the tropæolum, the geranium, the aster, the Sweet-William, Japan Lily, petunia, tritoma, hollyhock, zinnia, and stock.

The tropæolum in variety is my pride. Delicate, fragrant, floriferous, continuous, it asks the poorest soil you can afford, and just enough culture to pull out the interloping weeds. It will not do to call it nasturtium (which it is not), nor to allow that its seeds are fit for pickles, if you wish to make it popular. But examine these beds, and tell me if for gayety and sweetness they can be surpassed, — hues varying from brightest scarlet, orange-yellow, and deep crimson, to mauve and lemon and spotted; always a sheet of bloom; always a rich green bed of vegetation for ground. Pick all you care for: the beds are never exhausted. I would rather have a handful of these refreshing, cheerful, and sweet flowers than a peck of dahlias. Art has improved the varieties, until not only in color, but in shading, lining, spottings, and tints, the tropæolum rivals the carnation: in delicacy it surpasses that flower. I always reserve two or three beds without manure, and of the poorest soil, for my favorite; for it positively refuses to bloom under high culture. Vegetable beds pass quite out of the prosaic when bordered with the common tropæolum; nor does it quite spoil the romance to gather a pot of pickles from the abundant seeds.

The gladiolus has received high praise, but by no means high enough. Almost hardy, easily kept in a warm, dry place, you can have it in bloom from July till November. Begin to plant the bulbs late in March, or as soon as the ground opens, and continue at intervals till June. I always select those bulbs for first planting that are the most developed, and keep on planting as the sprouts show it to be necessary. If stored in the dark, they can be kept till the last of June without damage. And then how completely is delicacy blended with brilliancy and gorgeousness! Plant them close together in groups, or separately, or mingled with other plants, and every way they are fine. They are particularly fine planted in masses of tropical foliage, of cannas, ricinus, and caladiums. No matter how thick the groups, there is still room for a dozen of the slim stalks of gladiolus. They will bloom down to the just-formed bud, if placed in vases; and are certainly, for bouquets, unsurpassed. I intend planting next spring about eight hundred bulbs in my own garden, so I may have all I want.

Of geraniums for bedding, there is but one really excellent variety. It is the Attraction, sold by Wagner (formerly Howard) of Utica.* The Attraction of

* We do not know the geranium our correspondent values so highly; but cannot agree with him that it is (be it as good as he describes) the one "really excellent variety." If as good as he says, it seems strange it is not more generally known. — Eds.

Buist and others is a wholly different plant, and comparatively insignificant. The real Attraction has enormous trusses of a clear bright scarlet, and is a perfect mass of bloom continually. I have frequently found over a hundred buds and flowers on a single truss, opened in a large, round, full ball of bloom. It endures the hottest sun, and has no failure in it. The foliage is not equal in delicacy to that of the margined varieties; and, if it were, the plant would be good for nothing for bedding.*

The phlox is the great commoner. The best varieties are as tough and determinate as the old and poorer. By moving them in spring, you get early bloom from the old plants, and late bloom from the shoots sent up by the bits of roots left in the previous beds. I would particularly recommend this plan to those who wish to protract the bloom of their phloxes: Simply transfer the bulk of the plant to another place, and let the roots send up a few shoots from the old bed for later bloom. Our gardeners need particularly to sift their catalogues, and send out a better assorted list of this flower. The true soil to induce perfection, and clearness of color, is heavy loam; not sandy nor highly manured nor too compact soil, but a dark, heavy loam. The phlox is modified very largely by the ground it stands in.

The hollyhock is getting to be beyond praise. The zinnia, though coarse, is indispensable for brilliant and long-continued bloom. Give it the fatness of the land, and plenty of room. The Japan Lily (*Lilium lancifolium*) is the most artistic touch of Nature; and yet it is hardy, and easily multiplied. Give it a light, rich soil, and a high, dry bed. Mulch it from the sun in summer, and from the frost in winter. The lovely aster, always so charming, repays the best of culture, and cannot be too highly manured. The stock should be well mulched if you wish to see it in perfection. The tritoma fills the latest days of autumn. Dignified, royal, brilliant, and easily preserved, it will doubtless soon become popular.

Last of all, but among the first to bloom, one of the sweetest pets of the garden, let every one place the Sweet-William. Art has hardly improved any other flower as it has improved this. Raise hundreds of plants, and then pass from one to another in admiration, and tell me if you ever get tired of their charming variety and exquisite delicacy. The double varieties are so pure and so brilliant as to be quite essential to a complete collection. No two plants will ever give you exactly similar blooms, but in some way will multiply your pleasure. I shall never cease to be grateful to Mr. Bliss for introducing to me the improved varieties of this flower.

Enthusiast.

THE WHORTLEBERRY TOMATO. — The communication of Mr. Fearing Burr, in the Journal for April, on this plant, has convinced us of the trite old proverb, "There is nothing new under the sun." When we saw the announcement of the "whortleberry tomato" in the catalogue of several seed-growers, we really thought it was some variety of the old esculent. Mr. Burr says it is only the *Solanum nigrum*. If this be so, we must, in the name of humanity, protest

* Some of the "margined varieties" are very fine for bedding. — Eds.

against its further introduction. Although in many cases, when eaten, this fruit has been inoffensive, yet the fact that it is not only deleterious but poisonous in occasional ones is sufficient to condemn it *in toto*. In this vicinity, it had been, years ago, cultivated in our gardens, as of old the true tomato; for its novelty: and, owing to its sweetish taste, it became a favorite of children; and, in several instances which we can call to mind, death resulted. Even last summer, two cases of fatal poisoning from this fruit came under our observation. We in this section use every endeavor to eradicate it; for we would as soon permit arsenic to lie about in the reach of the little ones as to allow this abominable plant to have room in our gardens. Now, we would not impugn the motives of any one; but the efforts of any gardener to introduce this plant into use betrays great ignorance indeed. It may be said that cultivation destroys the noxious qualities. This is true in some measure; but the instances narrated occurred *from fruit subjected to high cultivation*. If, in time, those interested in the success of this plant can demonstrate, or rather convince the public, that it is no longer hurtful, and that it is really a great addition to our catalogue of vegetables, we shall be among the first to commend it; but, until such be the result, the cause of humanity pleads the more strongly.

W. H.

HARRISBURG, PENN.

PRICES OF AMERICAN WINES. — In the March number of your Journal, a correspondent asks, "How long shall we have to wait before we can buy American wines as good as we have now at one-half or one-third present prices?" In reply, I will suggest that he may have to wait until the growth of hops and grain for brewing and distilling has given place to the growth of grapes and pure wine. When the owners and cultivators of the land recognize the fact, that the production of hops and grain for brewing and distilling is at least a deviation from what is right; that it adds to the poverty of the country and to the distress of the people; that the production of grapes and pure wine is not only a duty, but a privilege; that it adds to the wealth of the country and to the comfort of the people, — then the hop-yard and barley-fields of this country will become vineyards, and we shall have pure wine in great abundance, and at low prices, leaving no temptation to adulterate or alter the natural composition of the juice of the grape.

J. M. McCullough.

BEEs AMONG PEACHES. — The article in your April number headed "Birds among Fruits" has suggested to the writer of this the consideration of *Bees among Peaches*. Many, in days long since gone by, when the peach-crop was remunerative, if not profitable, can call to mind the visits of the honey-bees, which came in swarms to feast upon the fruit, making a small puncture, which in a day or two became a small speck of rot, that ultimately destroyed its commercial value, thereby greatly modifying the admiration of cultivators for this "industrious insect;" making it a query, which was of more importance, — the bees, or the peaches. Believing this subject of importance to all who contemplate the culture of the peach, it is introduced with a view to invite discussion in your columns.

A.

THE PLUM-CURCULIO. — There are at least five beetles of the curculio family that are destructive to our fruits. In this paper, however, we shall chiefly confine our remarks to the one known as the true plum-curculio. For a full and scientific description of this insect, see Walsh in "The Practical Entomologist," vol. ii. p. 75.

This plum-curculio, so called, has of late years become so generally disseminated, and destructive to fruits, that any facts concerning its habits cannot fail to arrest attention. In this latitude, curculios begin to make their appearance early in the season, — always some days before the trees are in bloom; and are usually stocked with well-grown eggs by the time the young plums are as large as a pea. Everywhere in this region where orchards are numerous, and regularly in bearing, the curculio has so increased in numbers, that they no longer confine their operations to the plum, but deposit their eggs in all our orchard-fruits. These insects are well acquainted with the hickory-nut. This year, on a large shellbark-tree contiguous to my orchard on which there were one or two bushels of nuts, not one could be found which had not been destroyed by them.

I have also known them to deposit their eggs in strawberries, gooseberries, and occasionally in grapes. Perhaps it is a little curious that these last-named fruits, as well as apples and pears, should be attacked by them, since in none of these are the larvæ perfected. The same remark will also apply to late peaches stung early in the season; whereas in all the early varieties, as well as early nectarines, the apricot, and cherry, they breed quite as freely as in the plum.

Notwithstanding the larvæ are not perfected in the pear and apple, the eggs hatch; and the young grubs eat their way a considerable distance into these fruits, where they perish. The fruits at these wounded parts cease to grow; and some varieties of apples — the Rawle's Janet, for example, in some localities — nearly all rot from the punctures thus made. Those apples that escape rotting are so deformed and knotty as to be of little value, except "to sell" and for cider.

The mischief done by these insects is by no means confined to the loss of the stung fruits: these, under certain conditions, rot to such an extent, especially some of the early peaches, as to defoliate and kill all the interior branches, and so impair the vitality of the trees as to render them worthless, and in some instances to kill them. Within a few years, we have discovered that much of the black knot on the branches of our plum-trees was clearly referable to the stung plums resting and rotting on the branches; thus creating those conditions favorable to a species of a fungoid growth, resulting in that peculiar enlargement of the limbs known as the black knot.

To witness the operation of the curculio in stinging the fruit, it is necessary to approach her with caution. Take a near position, and remain motionless a few minutes, when she will cease to notice you. Being provided with a bit of mirror, resting it in a favorable position, and with the further aid of a glass magnifying eight or ten diameters, you will be able to view the "little Turk" at her work. The insect having taken a strong hold on the fruit, she depresses her snout, bringing it under her body, and in contact with the fruit. The end of the snout very much resembles the lower part of an elephant's trunk. A little way down in this, as she folds back the end of it, you will observe a pair of jaws, or shears.

If you wish to observe more minutely the shears, crush the body of a female curculio, and then place her on her back, under a microscope, with the end of her snout up: in her struggles she will fold back the end of it, and commence cutting right and left, so as to fully expose her shears, and her manner of operating them; the two halves of which are each an exact representation of the cutting blade of a pair of pruning-shears. These cutting blades are admirably adapted for making the crescent cut of this insect, also for wounding the fruits from which it sucks its food. With these shears she makes a minute cut just through the skin of the fruit; next, without changing her position, she thrusts her snout under the skin of the fruit to the depth of about a sixteenth of an inch, moving it back and forth until the cavity is large enough to receive the egg it is to retain. She next changes her position, and drops an egg into the mouth of the cut; then, regaining her former position, she takes the egg in the end of her snout, and crowds it to the end of the passage before described, the upper end of which has been enlarged to receive it. She then enlarges and deepens the cut at the entrance, giving it that peculiar crescent-shape which is the distinguishing mark of the plum-curculio. In this manner she continues her operations on from one to eight plums per day, until her store of eggs is exhausted; the daily average varying greatly according to the temperature, continued warm weather exciting the insects to the greatest activity.

Their eggs, after being deposited in the fruit, are left to depend on the warmth of the atmosphere to hatch. At this time they may be crushed with the thumb or finger nail without injuring the fruit. These eggs are oval, and of a pearl-white color, and large enough to be seen by the naked eye. When these are about to hatch, the form of the insect can be seen through the shell by the aid of a glass. The young insects, on emerging from the shell, burrow, and eat their way into the fruit; often nearly making the circuit of the stone before penetrating to it.

These grubs, or larvæ, are sometimes confounded with those of the long-snouted nut-beetles, that occasionally puncture and place their eggs either within the stone or on its surface.

Those deposited early in the season are sometimes wholly lost by a few days of succeeding cold weather. Once hatched, they are also liable to several casualties: for example, the Columbia, and several other varieties of plums, under certain conditions of growth, fill the passage made by the grub with water, and drown them. Others are lost by the too-premature falling of the fruit and by the cooking of the fallen fruit and the grubs it contains; by exposure to the sun; also from other causes, as we shall show farther on.

So hardy are these curculio larvæ, that after being sufficiently developed in the fruit, and having safely effected their entrance into ground which is adapted to their wants, nearly the whole brood will come forth the following year, perfect beetles, to renew their attacks on the products of our orchards. A small per cent of these curculio larvæ become pupæ late in the fall or winter, and come forth with the first warm days in the spring, and deposit their eggs as early as the 1st to the 10th of May. Twice, however, within the last twenty-two years, their first punctures were made May 28 and June 2. In both of these years,

the curculio came forth at the usual period, but delayed operations, as we suppose, in consequence of the cold.

So great is their power of reproduction, that, were the whole country one vast orchard, they would, in one or two years at most, so increase as to occupy the whole. Just in proportion as we increase the conditions needed for them, just in that proportion do we find them to multiply their numbers. Curculios crawl freely and quickly from one part of the tree to another. Before they take to wing, they start off at a rapid pace, expanding their wings as they go. They rarely fly, except in the middle of the day; though, in very warm nights, occasionally one will be attracted by and fly into a small light. They are very sluggish in their movements in the cool of the morning, and, when jarred upon sheets at this time, will remain a long while motionless; in appearance, a most perfect representation of a dry bud. Later in the day, when jarred from the trees, especially if the weather be hot and the sun shines on them, they will quickly regain their legs, and fly away.

Of late, several eminent entomologists seem to have hastened to the conclusion that all the larvæ of the curculio, after leaving the fruit, penetrate to a short depth into the earth, and there, in from twenty to thirty or more days, transform and hibernate under cover of bark, grass, and shingles. — See Walsh's article on the curculio, "Practical Entomologist," pp. 31, 75.

That curculios never hibernate above ground, we are not prepared to deny; having ourselves, in two or three instances, found them late in the season under cover of bark.

In this locality, however, that a large per cent of them do really remain in the earth during winter, at the depth of fifteen to thirty-six inches, is to our mind a well-established fact. During the month of January, 1868, while my workmen were excavating a ditch under peach-trees, I found two well-developed larvæ of the curculio at the depth of twenty-seven and thirty-eight inches; and during the month of April last, under some cherry-trees which had been neglected the preceding year, I found two perfect curculios nearly ready to come forth, four pupæ, and quite a number of the grubs, — some of them not more than half or two-thirds grown, and others about to enter the pupa state.

These curculio grubs come near the surface as they are about to change to pupæ, and from the earth as they transform. This process of transformation is going on during several months, varying according to their several degrees of development. This gradual emergence has probably given rise to the theory before alluded to; viz., that of the general hibernation of this insect in the beetle form.

Some of the advocates of this theory, on dissecting curculios late in the season, found their bodies to contain no eggs; while those examined by them in the spring were full of them.

In these examinations, it seems to us a physiological fact has been lost sight of; viz., that the ovary and the egg-germs it contains are not the result of an after-growth any more than in animals or other insects. Also, when the ovary is once exhausted, these insects may properly be considered to have run their course.

If this view thus briefly stated be correct, then it would seem to follow that insects examined in the fall, and found to contain no eggs, were really those that had exhausted their bodies of them, and could in no wise afford any proof of the general hibernation in the manner stated. Is it not possible that the insects dissected in the fall were those that had exhausted their ovary, and crawled into places of concealment, there to die, as they are known to do after having finished their work?

Entomologists have by experiment shown that a part of the larvæ of the curculio undergo a change in from twenty to thirty days. These experiments made by them in jars filled with earth cannot, we think, be considered conclusive, since the insects thus treated would be in a temperature different from that of the earth at the depth of from one to three feet below the surface. Again: is it not probable that such larvæ as had been perfected in the fruit were selected for experiment, whereas not more than one in ten of the punctured plums ever nourish the larvæ they contain to become mature grubs?

Three dozen curculios captured at the commencement of the season, confined and supplied with fruit, ceased to deposit eggs after the twenty-second day; when an examination under the microscope showed their ovary to have been entirely exhausted. Single pairs of curculios, confined and treated as above stated, yielded, one nineteen, all others from thirty-seven to fifty-three eggs each; and the longest time in depositing these eggs by any one individual was eighteen days. Where more than one pair of individuals were confined in a case, it was impossible to determine the number of eggs jointly contained by them, since an almost constant warfare was kept up, resulting in the loss of the eggs before they could be placed in the punctures made for their reception.

We have given the result of our observations, showing that large numbers of curculios remain in the earth during winter, and that their emergence extends through several months, thus keeping up a constant supply of fertile curculios until late in the season.

According to the theory of hibernation above ground, this could not be. The following table, compiled according to that theory in connection with known facts, would show us to be without fertile curculios for thirty-one days in what is known as the curculio season:—

First eggs deposited, say May 5.	
Time for eggs to hatch	5 days.
Time for larvæ to perfect themselves in fruit	20 "
Time spent by larvæ under ground	20 "
Time from emergence to laying eggs	8 "
	—
	53 "
Deduct twenty-two days, the latest time of depositing eggs by the	22 "
insects in confinement, leaves thirty-one days, as above . . .	—
	31 "

To dislodge the curculio, it is the belief of some persons that severe jarring and pounding of the trees is necessary to bring these insects to the ground; whereas just the reverse of this is the case, as any one may learn by approaching

the tree cautiously, and with the thumb and finger snapping the base of the limb on which a female curculio is at her work. At the first jar, the insect seems to become aware of danger. She immediately starts up; and, by the time the second or third is felt, she will have loosened her hold, and depressed her snout upon her body, folded her legs and antennæ, and dropped to the ground. Violent shaking of the trees generally fails to frighten them; while any decided jarring motion quickly imparted to the tree is all that is required to bring them down.

Various modes for destroying these insects annually appear in print. Ninety-nine out of each hundred are worth less than the paper on which they are written. Nearly all the successful, so reported, are evidently made by persons, who, having in preceding years lost their fruit from being stung by this insect, set about trying some experiment to head off the curculio, and are surprised to find their fruit escape injury. They at once jump to the conclusion that they have hit upon the infallible remedy, and without loss of time herald it to the world.

If persons experimenting were fully acquainted with its habits, and the many casualties this insect is subjected to, they would then see how premature it would be to give the result of a single season's experience as conclusive of success. Three only of the remedies that have been proposed will receive any notice from us.

A few years since, the lime-remedy was quite generally received as a sure protection to the plum. At the time of its appearance in print, we were operating with our curculio-catcher, and at once discontinued its use on several of our trees, and made a most thorough trial of the lime, which at first promised to be a success. It did not seem to deter the curculio from depositing its eggs in the plums; but they did not hatch.

Later, the weather becoming dry, the succeeding deposits did hatch, and the larvæ penetrated the plums as freely as in those not limed.

Further experiments with the lime proved, that, so long as the weather was wet, the lime, or the caustic properties of the lime, were imparted to the water, and entered the perforation in which the eggs were deposited, and destroyed them, but was of no value in dry weather.

The second remedy we shall consider — that of pasturing the orchard with hogs — is valuable to some extent; since all the fallen fruit, with the larvæ they contain, are consumed by them. In isolated orchards, this would be sufficient protection, were it not for the fact that larvæ are often perfected in the fruit, and eat their way out, while the fruit is yet upon the tree. To our certain knowledge, this invariably occurs to an extent to stock the orchard with curculios the following year.

We now come to the third and only certain remedy yet known, — that of jarring down and destroying the insects during the entire curculio season; and, since ours is the only practical mode of capturing the insects expeditiously yet published, we refer the reader to a description of and the mode of operating the same to "*The Practical Entomologist*," vol. ii. p. 78.

VARIETIES OF CROCUS. — Of diversities in the habit and style of growth of the different varieties, but little can be said. The early-flowering Cloth-of-Gold, the Common Yellow, and the Versicolor, are peculiar in this respect: the other varieties must be classed together; excepting, perhaps, that, though the style of foliage may be much the same, the largest bulbs invariably produce the strongest leaves. The earliest to bloom are the Yellows: the earliest of these two — for there are but two distinct varieties of yellow spring-flowering crocus — is the Cloth-of-Gold. It is very dwarf-growing, and blooms freely. The Common Yellow is a little later, grows taller and stronger, and produces more flowers than any other variety. It is remarkably free in blooming; and, as a rule, should be allowed plenty of room, as the bulbs branch out in a remarkable degree. The Giant Yellow, the Large, and also the new Golden Yellow, are but larger bulbs of this variety. It is imported generally in two sizes; and, where extra-sized roots are added, they are christened and priced accordingly. The old Crocus versicolor, or Cloth-of-Silver Crocus, — for any original difference between them appears to be entirely lost, — is a dwarf-growing and very free-blooming kind, and does well for massing. The flowers are white, with purple stripes; but they are neither so large nor so stout as the newer Striped varieties. The Scotch Crocus, so called, now rarely met with, is a Striped variety imported from Holland under that name. The bulbs are very peculiar, being hard and smooth, and unlike any other spring-flowering kind. After these, it would be difficult to assign the order of flowering. Speaking generally, the Striped varieties are the earliest, then the Blues, and lastly the Whites.

Of the Striped varieties, *Bride of Lammermoor*, *La Majesteuse*, and *Sir Walter Scott*, are three very fine varieties, of much the same build and growth; *Bride of Lammermoor* being the darkest, and *Sir Walter Scott* the boldest in the color of the stripe. Of the darker Striped kinds, *Albion* is the largest and showiest: the flowers are large, and of a globular shape, heavily flaked and striped with violet: it is also distinct and good. *Florence Nightingale* is a large and bold light Striped variety. *Ida Pfeiffer*, a lovely flower of good form, delicately striped with rosy lilac, very fine. *Madame Mina*, a very pretty and free-blooming pale-violet-striped flower, of good form. *Princess Alexandra*, *Argus*, *Comtesse de Morny*, *Parnassus*, *Elfrida*, and *Albertine*, are more than summed up in the sorts described above: they are not even required as varieties. *Rhea Sylvia* is a medium-sized, pale, striped flower, but very pretty. *Duke of Cumberland*, a deep lilac, with stripes of a darker shade, and edged with white, is a somewhat curious and novel flower, which could be classed both with the Blue and the Striped varieties, and yet belongs exclusively to neither; so that, perhaps, it would be best to class it with the Edged flowers. I had two forms of *Argus*, — one a very pale striped flower of medium size; the other a heavy violet-striped flower, with more color in it than could be seen in *Albion*, though otherwise not differing materially from it, nor yet quite so large. Lastly, *Maria*, *La Sylphide*, *Miss Priestley*, *Géant des Batailles*, *Baron Chasse*, *Duchess of Sutherland*, *Napoléon*, *Leviathan*, and *Philades*, are sorts that can be obtained to suit the fancy

of the importer to whom names are an object, but are scarcely required for any other purpose than to impart obesity to a catalogue.

The White varieties necessarily admit of even less variation. The most beautiful variety I have ever seen, and one that cannot be too highly commended for its superb quality, is named Goldfinder. The flowers are very large, globular, and pure in color, and have rich, dark-orange stamens. Caroline Chisholm and Mrs. Beecher Stowe are undoubtedly the same. It is a dwarf-growing, free-blooming kind, very useful for pots. Grand Conquerant is one of the most novel white flowers I have yet met with, — pure white, edged with citron, and extremely pretty, as well as free-blooming. Mont Blanc has large and bold pure white flowers; and, though classed with the White varieties, the insides of the blooms are faintly pencilled with lilac. It is a robust-growing kind, useful for out-door work. To these add Mammoth, a large white flower, changing to cream; Calypso, another creamy white; and Queen Victoria, — and the list is complete. A reserve list can be formed of the following varieties, — Mathilde, Grand Vainqueur, Porpus, Isabella, Marie Antoinette, and Bride of Abydos.

Of Edged flowers, — a very small division, — the variety named Duke of Cumberland, previously described, can be regarded as one; the old Ne Plus Ultra, violet with white edge, a large, fine, and showy flower, is another; and Lord Wellington, deep violet edged with white, a small but pretty flower, completes the list of kinds I have seen. I find Ne Plus Ultra to be very effective out of doors, and it has the additional recommendation of being very cheap.

Lastly comes that somewhat numerous group including the Blue and Purple varieties. Among these there are some beautiful kinds, large in size, and deep in color. I find the darkest colored of the whole group — not simply the darkest on first expanding, but the darkest throughout the blooming period — to be a variety with a rather small bulb, named Sir John Franklin. It is of a rich, dark, glossy purple; and it did remarkably well with me out of doors. David Rizzio, often termed the darkest blue, is paler in color than the foregoing; and Prince Albert is paler still: yet both are fine, bold flowers. Prince of Wales is identical in every respect with Prince Albert; and Vulcan, a very large pale-violet flower, is the same as Othello. *Lilaceus superbus* is a somewhat distinct kind, with a broad flake of a lilac tint up each petal. These are all the distinct shades of blue, so called, I could possibly light upon. I add a supplementary list of the following kinds which came under my notice, premising that they are well represented by the foregoing: Baron von Brunnnow, Brunel, Lamplighter, Gen. Pelissier, Charles Dickens, Jupiter, Von Schiller, Sir R. Peel, Loveliness, and La Simplicité.

I am compelled to admit, that though, amongst the varieties in these reserve lists of the several divisions of color, there were many points of resemblance, yet, from a close and daily inspection, one seemed to be able to detect some small and distinct traits of character, either in the size or shape, or in the purity or depth of the color of the flowers, in the height they grew, in the time of flowering, and even in the form, the color, and the greater or less prominence of the stamens. — *Abridged from Gardener's Chronicle.*

TREES. — Noticing some remarks in the Journal upon the beauty of our sweet-gum-tree, *Liquidambar*, or *Bilstead* as it is generally called in this part of the country, we can fully indorse the statement. But we have found to our cost that they cannot safely be removed in the autumn. We purchased a dozen good-sized trees for planting by the roadside in the fall, and all but two died the following summer; and those that lived scarcely made any growth. A few years ago, we planted out a hundred and fifty sweet-gums about two feet high, in the fall; and only about twenty-five lived and grew next season. We find no difficulty in making them live when transplanted in the spring. When they have been transplanted two or three times, they make a compact growth, and are much prettier than those grown in the woods and fields. This tree forms a good contrast to other deciduous shade-trees, and is especially admired for its glowing crimson autumnal livery. We find the same difficulty in transplanting the tulip-tree (*Liriodendron*) and the magnolias in the fall. A lot of two hundred medium-sized tulip-trees transplanted the first of the winter were nearly all killed to the ground. If it is necessary to purchase any of these varieties in the fall, they had better be covered with earth, or protected in some other way. Our experience may not coincide with the experience of other tree-planters; but we give it for what it is worth. There are a few varieties of shrubs that will be more likely to live if planted in the spring, — the *Spirea Reevsii*, for instance; and a few others regarded as nearly hardy. We have also found that the young sycamore-maples will kill down to the roots if removed in the fall, if succeeded by a severe winter. The Norway maple we have found to be the hardiest of all, and it will bear more rough usage and exposure than any other ornamental tree. We have often noticed that boys sometimes travel long distances to gather nuts, and are often weary and footsore with carrying their bags or baskets full home. It has occurred to us that it would be a kindness and an act of humanity for us to plant black-walnut and butternut trees more frequently than we now do. Would not the children bless our memories, if, as we planted our roadside trees, or trees around the barns and carriage-houses, we interspersed some nut-bearing trees? Is there not some spare corner where we could plant a black-walnut? or is there not room along the lane by the carriage-house, or some good place, where they will flourish, and reward in time the family or the neighboring boys with plenty of nuts? We planted a few years since a couple of black-walnut-trees near the barn, and they are now objects of beauty. They began to bear in ten years, and for eighteen years they have yielded a crop every year. Last fall we observed a fig-tree standing in the open ground at Charles Downing's, Newburgh, N.Y., full of fruit, the second crop just ripening. His method is to keep it low by good training, and to bend the stems down when the cold weather destroys the leaves, and cover deep with earth, over which he places straw, coarse litter, or any protection to prevent freezing.

A pawpaw was also observed growing finely in the same garden.

I. H.

NEW GLOXINIAS. — Some extraordinary seedling gloxinias, as good as they are entirely new in style, appeared at the Paris Exhibition, during the year 1867. They have sprung from a seedling of M. Vallerand's, spotted in a way that reminds one of the achimenes called Ambroise Verschaffelt; and from this many exquisite varieties have sprung. No choice varieties of foxglove, or calceolaria, bear such handsome and delicate spotting; while the improvement in form is equally remarkable, — the limb of some erect varieties spreading out flat and waxy till the flower looks like a dipladenia. This is particularly the case with varieties having a stain of rose at the base of each limb segment, and which afterwards spreads out into a rosy suffusion towards the margin. Some varieties have the throat spotted; but generally the throat is pure white, and the limb regularly spotted with rose or lilac; while a few are of a pure waxy white, and with a simple stain of rose or purple or blue appearing at the base of each segment of the limb. When they get into commerce, it may be expected that an increased stimulus will be given to the culture of the gloxinia.

VALLOTA PURPUREA AFTER FLOWERING. — The plant should be kept rather dry at the root during the winter: in fact, give it no water so long as its foliage remains fresh, which it will do in a room-window for weeks. When it is growing freely, water should be given copiously, and the pot may be set in a saucer of water. When it has ceased growing, lessen the supply of water; and keep the soil no more than moist whilst the plant is not in active growth. Do not repot it, nor at any time give it a large pot, as it will flower much better when the roots are confined than when they are allowed much soil. A compost of two-thirds rather strong loam from rotten turfs, and one-third leaf-mould, with a free admixture of sand, will grow it well, good drainage being provided. It is increased by offsets, which are produced around the old plant rather plentifully.



THE Editors of "The American Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulturists.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

X. Y. Z., New Jersey. — We tried the Jucunda Strawberry last season, but did not fully succeed. We found that on our sandy, dry land, the plants burned, or were scorched by the sun to such a degree that they were greatly injured. Do you know if this is generally the case with this variety? — We have heard of but one other case. We should infer from all we have heard that the variety does best on strong, clayey land.

C. E. A., Clarksville, Tenn.—I wish to know about almonds, English walnuts, pecans, and Brazil nuts, if the Brazil nut can be made to grow successfully in the United States.

What latitude, what climate, can they be made to grow best in,—bottom lands, or uplands? Which of the Western States would suit them, or any two of them,—Minnesota, Nebraska, Missouri, or Texas? and what latitude of Texas? Where, from latitude 29° to 45° , would they bear transplanting? How long from seed before they would bear? and how much could one expect from a tree on an average? How far apart put the plants? and any other general information.—The “Brazil nut” is produced by *Bertholletia excelsa*, which is one of the tallest trees of the South-American forests, frequently attaining the height of a hundred and fifty feet. It is very plentiful on the banks of the Amazon, the Oronoco, and Rio Negro. The leaves are entire, about two feet long, six inches wide, of a bright green; the flowers are cream-colored.

You will thus see that it would be as easy to grow bananas and cocoanuts in Tennessee as Brazil nuts.

Almonds you can grow. They are even hardy enough to live, and sometimes flower and fruit, with us in New England, as they have done in our garden.

Treat them in every respect like peach-trees. The bitter almond is the hardiest.

The English walnut (*Juglans regia*) would probably prove hardy with you, and be easily cultivated. It grows fifty feet high, with a large spreading top and large trunk. From the nut it would be long in coming into bearing; but the time would depend upon the soil and culture. In a rich loam, it would grow very rapidly.

It would not be hardy in Minnesota, nor would the almond or pecan-nut.

The pecan-nut (*Carya oliviformis*) is a tall tree, and is perfectly hardy with you, but not in the Northern States. The chief supply of nuts comes from Texas. The tree is very handsome, of rapid growth, and bears immense crops. You can transplant almonds; but all the walnuts should be sown where they are to stand. They can be transplanted; but the chance of loss is great. The time your trees would come into bearing would depend much upon your culture. As a general rule, a seedling-tree is very long in coming to fruit. Almonds might give a little fruit in three to five years; but English walnuts and pecans would not begin to bear for fifteen or twenty at the earliest, and would not give you large crops for forty.

The distance between your trees you can easily regulate by the information we have given you as to size.

The yield of fruit would depend entirely upon the age of your trees and the general culture.

WACHUSET.—I did not lay down all my grape-vines last season, and I find that many of them are very much injured. Why should they have suffered more last winter than they ever have done before?—One reason why they did was because, last season being a wet one, the foliage mildewed, and the wood did not ripen well, and was not able to withstand the severity of the winter.

K., Newton. — Having had some little experience with the *Cupressus Lawsoniana*, I wish to inquire how it has generally stood the past winter in this section. I regret to say that two stout plants that I have had three years, although thoroughly enveloped by cedar-branches, have been badly injured, if not totally destroyed. A few plants about two feet high, protected thoroughly in the same way, have lost their foliage *totally*, and are probably killed; while from seventy-five to a hundred of the size of the latter were laid flat on the ground, and covered very thickly with cedars and arborvitæ. A large portion of these have been badly injured: a part may, perhaps, be saved uninjured; but I very much fear that this beautiful "evergreen glory" will not be sufficiently hardy for this climate. K.

[Will our friends in different sections of the country give us the result of their observation or experience with this evergreen? Evergreen-trees of various kinds suffered more last winter than they have for many years before. — ED.]

PYRUS. — My Doyenné du Comice pear-trees seem to be injured by the winter. The twigs, or new growth, have turned black, and will die. Is this variety liable to this trouble? — We have heard such complaints concerning this otherwise excellent variety. Some cultivators declare that it is entirely free from such trouble in their grounds. It is a most excellent pear.

W. K. G., Utica, N.Y. — I have seen some talk in the papers of late about *thornless* blackberries. Can you give me any information? — We know that the catalogues speak of Newman's Thornless Blackberry; but we know nothing about it. We have heard of another, which is said to be very large and fine, called the Wachuset. Mr. Dodge of Fredonia has one that is perfectly thornless, the fruit of which he claims is equal in size and quality to the Lawton. We have heard of another, that originated in the town of Weston, Mass., that is very hardy, withstanding the winter perfectly, and has but *very* few thorns. It will be a great comfort, surely, if we can have blackberry-bushes without thorns.

CAMBRIDGEPORT. — It is quite a common practice in our neighborhood to cut back pears very severely every fall or spring. Do you approve of such a course? — We should prefer not to do it. We think it would be better to have fewer trees, and give them room. One reason why the trees are so cut back is that they are planted so near together, that, unless this is done, they would soon run together, and the branches interlock. We have seen pear-trees in gardens so trimmed as to appear in summer like a green round shaft, some three feet in diameter, rising perhaps fifteen feet. It involves a great deal of labor, and we think the plan not worthy of imitation.

VITIS. — My grape-vines are three years old, and will bear this year. Not having had experience, I hardly know how much they ought to be allowed to bear. What do you say? — We cannot say certainly; but we can and do say most emphatically, Don't let them over-bear. If they are strong vines, it would not hurt them to carry six pounds of fruit.

W. J. L., Chicago, Ill. — How deep shall I plant pear-trees on quince-stocks? If the soil is very stiff, what can I do to render it lighter and more friable? Do you consider it desirable to let such trees strike roots from the pear-stock?— We recommend planting the dwarfs rather deeply, so that the point of union will be at least two to three inches below the surface. We know a garden where the roots of many of the dwarf trees were from six to ten inches below the surface, and they gave the very best results; in fact, produced better fruit than was grown in any other part of the garden. If the soil is very stiff, use sand, gravel, or spent tan, freely. This latter material has been extensively used in this vicinity with the very best results. We confess that we have looked upon its use with distrust; but the results are very satisfactory. We do not consider it desirable to have the dwarf root from the pear; for it then ceases to be a dwarf, while it does not become so good a tree as can be produced from a pear on its own roots. In all cases where we discover that our dwarfs have made roots from the pear, we cut them; for they stand in some cases among standards when there is not room for any thing very large.

INQUIRER. — I have quite a number of large dwarf pear-trees of poor varieties, and I am not content to leave them: I shall either graft them, or dig them up. Which plan had I better adopt?— If we should advise, as we have often done before, we should say, Dig them up, and set out other dwarfs, or, what would be better, standards. We have never had good success with such trees after they have been grafted. If your trees are fine, thrifty ones, you can try the experiment. On the whole, we would advise you to graft a few of them, and satisfy yourself.

J. G. — Has the Clarke Raspberry proved hardy the past winter?— Yes: we have seen plants that were left standing, and they start strongly, even to the terminal buds. Possibly, in other locations, they may not have stood as well. Let us hear from different parts of the country.

